Nova Scotia

REPORT OF THE

Royal Commission on Post-Secondary Education

PROVINCE OF NOVA SCOTIA

1985

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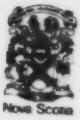

Royal Commission on Post-Secondary Education

18 December 1985

The Honourable Alan R. Abraham, C.D.
Lieutenant Governor of Nova Scotia

May it please your honour, Sir,

Pursuant to the instructions given to us by Order-in-Council 83-167 of the tenth day of February, 1983, we the undersigned are pleased to transmit herewith the Report of the Royal Commission on Post-Secondary Education.

We have the honour to be your obedient servants.

Rod J. MacLennan

Joan Gregson Evans

William S. Shaw

SEAL

BY HIS HONOUR
THE HONOURABLE JOHN E. SHAFFNER, B.A., D.C.L.
LIEUTENANT GOVERNOR OF NOVA SCOTIA

TO: ROD J. MACLENNAN, OF TRURO, COUNTY OF COLCHESTER
DR. WILLIAM S. SHAW, OF ANTIGONISH, COUNTY OF ANTIGONISH
JOAN GREGSON EVANS, OF HALIFAX, COUNTY OF HALIFAX

GREETING:

WHEREAS it is deemed expedient to cause inquiry to be made into and concerning the public matters hereinafter mentioned in relation to which the Legislature of Nova Scotia may make laws;

AND WHEREAS education in Nova Scotia has always been of profound importance to the well-being of the people of Nova Scotia;

AND WHEREAS it is desirable to appraise the state of post-secondary education in the Province and to obtain recommendations as to the nature and measure of public support for post-secondary education which may be required to best ensure the greatest benefit to Nova Scotians in the future;

NOW KNOW YE THAT I have thought fit, by and with the advice of the Executive Council of Nova Scotia, to appoint, and do hereby appoint you, Rod J. MacLennan, Dr. William S. Shaw, and Joan Gregson Evans to be during pleasure Our Commissioners under the Public Inquiries Act, the first named to be Chairman thereof, to inquire into and make recommendations to the Governor in Council with respect to post-secondary education, and without limiting the generality of the foregoing to:

(a) determine present and probable future needs for post-secondary education, taking into consideration

(i) the requirements of the people, the economy and society of Nova Scotia;

(ii) opportunities for inter-institutional cooperation to further rationalize the administration and provision of post-secondary education in universities, colleges and other institutions;

(iii) standards necessary for education of students wishing to enter the professions, and the contemporary requirements of the professions;

(b) examine the impact of federal fiscal arrangements on the Province's ability to maintain the existing system of post-secondary education of Nova Scotia;

(c) examine the current structure, organization and financial position of post-secondary educational institutions, the legislative and administrative provisions related thereto and the form and extent of government support;

(d) explore opportunities for the improvement of the present methods of coordination and development of overall policy for post-secondary education in Nova Scotia;

DIRECT the said Commissioners to report the evidence and findings of such inquiry to the Governor in Council and make recommendations thereon.

DIRECT the said Commissioners to retain the services of such technical, clerical and other personnel, including experts and legal counsel who in the opinion of the Commissioners are required for the purpose of the inquiry, upon the approval of the Management Board.

AUTHORIZE payment to the Commissioners, Secretary and other personnel required in the work of the Commissioners, for necessary disbursements, travel and reasonable living expenses as are required in the discharge of their duties.

ORDER that remuneration, costs and expenses payable or incurred in the course of the inquiry shall be paid out of the Consolidated Fund of the Province.

The power and authority of the said Commissioners shall extend to and include all matters which they consider relevant to the inquiry prior to, or subsequent to the date of their appointment.

GIVEN under my Hand and Seal at Arms at the City of Halifax this 10th day of February in the year of Our Lord one thousand nine hundred and eighty-three and in the thirty-second year of Her Majesty's reign.

(signed H. W. How)

PROVINCIAL SECRETARY

Secretary to the Commission

By Order-in-Council 83-195 of the 15th day of February 1983 D. G. L. Fraser was appointed Secretary to the Commissioners with effect the 10th day of February 1983.

Summary

The burden of this report is concern for the achievement of quality in post-secondary education in Nova Scotia, both in the universities and in non-university occupational training institutions. The 115 recommendations of this report seek to assist in the realization of this goal.

The Commission accepts the present number of universities and colleges in Nova Scotia as confirmed. It considers, however, that these institutions have not benefited from appropriate planning and development procedures to the extent required to ensure quality education in a province in the particular demographic and financial circumstances of Nova Scotia. In the years since government financial support of universities became a fixed feature of Nova Scotian public policy, post-secondary development has been uncoordinated and incremental and has not taken into account the limited financial resources available in the province. The Commission therefore believes it is imperative that Nova Scotia's universities be considered and treated as a provincial system. The system would, however, preserve the corporate identity of existing institutions and the degree of autonomy necessary for the performance of academic duties and responsibilities.

To ensure an appropriate level of planning and coordination in university programmes, resource allocation and capital development, the Commission recommends the creation of a statutory autonomous provincial intermediary body, to be called the Nova Scotia Council on Higher Education. The duties of the Council will be to coordinate university resources, to determine funding requirements and the allocation of public monies to the system, and to advise the Minister of Education on university affairs. The Council on Higher Education should have broad powers of inquiry and executive action over existing and proposed academic programmes, and will function in a way best calculated to raise and maintain university standards in Nova Scotia.

The Commission is aware that quality education depends upon consistently high standards at all levels of the educational process. At the secondary level, the Commission is disturbed by the inadequacies of high school preparation for university admission as demonstrated in submissions to the Commission and by the Commission's own research. It therefore recommends that the universities establish entrance requirements that will necessitate academic preparation in a core programme in the secondary school system of the province. The universities should also administer tests

of academic ability to ensure that matriculating students are of a standard that will promote and maintain quality in the system. To advise students about university and other post-secondary entrance requirements, the Commission strongly believes that secondary education in Nova Scotia must have a vastly expanded and much more effective counselling programme.

At the post-secondary level, the Commission deplores the trend within the universities towards freshman and sophomore specialization and urges that the liberal arts and sciences be the foundation of academic studies. It therefore recommends that all candidates for university degrees in Nova Scotia complete a core programme in the liberal arts and sciences before proceeding to subject or programme specialization in their final years. The Commission is also concerned to ensure that faculty be afforded the opportunity for continuous professional development, and recommends that methods be developed to encourage the highest level of quality amongst the faculty.

In considering the financial issues facing the province in its relations with universities, the Commission has examined in detail the paradoxical funding situation in Nova Scotia, where government grant levels are among the lowest in Canada on a per student basis, yet are nearly the highest when measured on a per capita basis. The problem arises because Nova Scotian universities enrol disproportionately large numbers of out-of-province students, together with a very high proportion of qualified Nova Scotian students. In view of the province's constrained ability to provide more funds because of limited fiscal capacity, the Commission concludes that in the future Nova Scotian institutions can accept no more than their fair share of students from other provinces and abroad. Failing appropriate funding from other provinces, or from the federal government, there is little realistic alternative to adopting some type of non-resident quota system, if we are to achieve and maintain the level of excellence that is the concern of this Commission.

The Commission has considered the apportioning of cost between government and students. Because the students themselves are the chief beneficiaries of their education, the proportion paid by students should rise from current levels. However, to ensure the maintenance of accessibility to all those qualified by ability and attainment, an Educational Opportunity Fund should be established to make loans available to needy students, such loans being repayable contingent upon future income.

With respect to occupational education, which was studied at both the vocational (pre-Grade XI entry) and technical (post-secondary) levels, the Commission identified the chief problems as lack of recognition, lack of responsiveness to industrial and job market needs, and lack of coordination. The Commission believes that the flexible programmes of the occupational education system should be recognized as the primary means by which the province meets the training needs of its workforce. In particular, the three technological institutes — the Nova Scotia Institute of Technology, the Nova

Scotia Land Survey Institute and the Nova Scotia Nautical Institute — should be recognized for the excellence of their varied programmes and their potential to meet the future needs of high-level technical education. To improve the responsiveness of occupational education, chiefly at the vocational level, the Commission has made recommendations concerning staff and programme development. Finally, both to stress the importance of occupational education as a distinct element in the educational system and to improve coordination of the occupational education system, the Commission believes a new Department of Manpower and Occupational Education should be created.

Continuing education in Nova Scotia has not been as fully recognized or accepted as part of the lifelong process of education as it should be. In an age when dynamically changing technology and industrial processes will clearly require extensive retraining programmes for a large proportion of the population throughout its working life, the Commissioners feel it imperative that the scope and capacity of continuing education be expanded and invigorated. To this end the Commission recommends an acknowledgement of continuing education as a system with appropriate coordination provided by a Council on Continuing Education operating under the aegis of the Department of Education. This Council should be an animating group and should have access to the universities, the Department of Education and the Council on Higher Education to achieve its purpose.

Acknowledgements

An enquiry such as this necessarily involves the participation of many people endowed with many forms of expertise. The Royal Commission counts itself most fortunate that it was able to draw upon the specialist and detailed knowledge of a large group of people. The Commission accordingly wishes to record its gratitude to the 108 respondents who submitted briefs, to those who discussed the contents of their briefs at the public hearings, to the university presidents, vice-presidents and other administrators for their cooperation and hospitality, and to the Student's Union of Nova Scotia and the Nova Scotia Confederation of University Faculty Associations for their particular contributions of both a formal and informal nature.

Mr. John Terry, Mr. Larry Durling and Dr. Helmut Schweiger, of the Maritime Provinces Higher Education Commission, and Dr. John Keyston, of the Association of Atlantic Universities, provided the Royal Commission with invaluable statistical data and other information concerning our university system.

A number of individuals and groups worked closely with the Commission and contributed valuable research and information. Among the individuals were Dr. Wayne Grennan, Dr. Mary Schoeneberger, Dr. H. Joe Murphy, Dr. Paul Hobson and Dr. K. Gary Grant. Deserving special mention are the members of the Study Group established to undertake a preliminary review and assessment of post-secondary educational needs: Dr. Les Jaeger, Dr. J. Allan Myrden, Dr. Mairi Macdonald, Ms. Joan Brown-Hicks, Mr. Gerald O'Malley, Mr. Tom Nickerson, Mr. Ken Mader, Mr. Dennis Covill, Dr. J. Murray Beck, Dr. Merritt Gibson, Dr. Don Arseneau, Prof. David Pigot and Dr. J. J. MacDonald.

Members of many government departments assisted the Commission with their specialist knowledge. Provincially, the staff of the Department of Education, the Department of Labour and Manpower, the Department of Social Services and the Department of Finance; municipally, the staff of the Department of Social Assistance of the City of Halifax; and federally, the staff of Statistics Canada, the Department of Finance, the Department of Employment and Immigration, and the Department of the Secretary of State were all unfailingly courteous and helpful in their responses to the Royal Commission's requests for information. The Commission wishes to express particular thanks to the Education Committee, Human Resources Sector, of the Voluntary Planning Board of Nova Scotia.

The Royal Commission benefited from discussions with members and staff of other commissions studying post-secondary education nationally and in other provinces, particularly Dr. Bill Sibley and Mr. Ed Bovey, O.C., of the Commission on the Future Development of the Universities of Ontario, and Dr. Al Johnson. Mrs. Mary Hegan of the Royal Commission on the Economic Union and Development Prospects for Canada facilitated access to that Commission's conclusions.

In Britain, Mr. Michael Hellyer and the Agent-General of Nova Scotia provided the Commission with invaluable introductions to organizations such as the Department of Education and Science and the University Grants Committee.

We wish to express our sincere gratitude to a number of individuals who were associated with our staff. Mr. Denis Cassivi ably performed many different tasks, especially during the preliminary stages of the Commission's work. Mr. E. L. L. Rowe spent three months with us in 1984, and coordinated the work of the Study Group. Mr. Doug Patton and his staff prepared the transcripts of the public hearings.

We wish especially to thank our staff whose work was of inestimable value to the Commission. Prof. D. G. L. Fraser acted as the capable Secretary to the Commission. Mr. J. P. O'Neil, as our financial consultant, made a major contribution to our work. Dr. Alastair Saunders, our research advisor, directed and undertook much of the research and writing. Miss Linda Gould, Mr. O'Neil's secretary, merits our thanks as well for her capable assistance. Mrs. Nancy Wynn Dakin, the Commission's secretary, excelled in her varied and demanding secretarial duties. The Commissioners express to her their unreserved gratitude for her loyalty and diligence.

R. J. M.
J. G. E.
W. S. S.

Table of Contents

Letter of Transmittal iii

Commission v

Summary ix

Acknowledgements xiii

Table of Contents xv

List of Tables xix

1. Introduction 1
   Terms of Reference 2
   University Education 5
      (a) Development 5
      (b) Types of University Education 7
      (c) The Universities of Nova Scotia:
         Their Past and Present 11
         (i) Foundations 11
         (ii) Developments in the 1960s and 1970s 12
         (iii) Provincial Funding: MPHEC 16
         (iv) The Universities at Present 21
   Occupational Education 30
      (a) Development of Occupational Education in Nova Scotia 33
   Objectives of Post-Secondary Education in Nova Scotia 35
      (a) Objectives for the University System 36
      (b) Objectives for the Occupational System 39
   Recommendations 41

2. Universities: Issues of Quality 43
   The Entering Student 46
      (a) Fundamental Academic Abilities 47
      (b) Fundamental Knowledge 51
      (c) The Entering Student from Nova Scotia 52
         (i) Lack of Core Curriculum 52
         (ii) Uncertain Standards of Marking 52

(d) Revised University Entrance Requirements 54
(i) Tests of Ability 55
(ii) Core Subjects for Entry 55
(e) Forum on Post-Secondary Affairs 56
Guidance Counselling 57
Curriculum 63
(a) Liberal Education 63
(b) Public Concerns 64
(c) Reasons for a Core Curriculum 67
(d) A University Core Curriculum 68
Faculty 71
(a) Instructional Quality 72
(b) Research Ability 74
(c) Sabbatical Leave 77
(d) Tenure 77
(i) Purpose 77
(ii) Tenure in Practice 79
(iii) Review of Tenure 80
(e) Recruitment 84
(i) Recruitment of Women 84
(ii) Prospects for the Recruitment of New Faculty, 1985-2000 87
(iii) Creation of Opportunities for Hiring New Faculty 91
A Sense of Purpose 92
(a) The Political Environment 92
(b) Administrative Organization of the Universities 93
(c) New Administrative Mechanisms Required 94
Recommendations 97

3. Universities: Finance 101
Background 102
(a) University Income 102
(b) Enrolments 107
Requests for Increased Funding 108
Analysis of Enrolments in Nova Scotian Universities 110
Analysis of Government Funding of Nova Scotian Universities 116
(a) Current Levels of Provincial Government Funding 117
(b) Fiscal Capacity and Actual Revenues 120
(c) Established Programmes Financing (EPF) 122
The Future of Government Financing of the Universities 124
Allocations of Operating Grants Among Institutions 130
Tuition Fees 135
(a) Relation of Fees to Instructional Costs 135
(b) Foreign Student Fees 137
(c) Programme Differential Fees 138

Accessibility and Educational Opportunity Fund 138
Financing Basic Research and Development 140
Private Sector Funding 142
Recommendations 145

4. Universities: Coordination 149
The Problem Stated 149
Responses to the Problem 152
System Responses Assessed 155
(a) Voluntary Cooperation and MPHEC 155
(i) Lack of Programme Review 155
(ii) The Case of Teacher Training 157
(iii) Problems of an Advisory Body 159
(b) Consolidation: A University of Nova Scotia 161
(c) Coordination: A Council on Higher Education 163
Composition and Responsibilities of the Council 165
(a) Composition 166
(b) Responsibilities 167
(i) Long Range Planning 168
(ii) Programme Review 169
(iii)Programme Approval 170
(iv) Funding Decisions 171
(v) Other Matters 171
Recommendations 175

5. Occupational Education 179
I. The Current Situation 180
Institutions and Levels of Occupational Education 180
(a) Secondary Schools 181
(b) Vocational Schools 181
(c) Apprenticeship 185
(d) Institutional Adult Training 186
(e) Technological Institutes 186
(f) Universities 187
(g) Private Sector Institutional and Workplace Training ... 187
Student Numbers 188
(a) Base Figure for Enrolment and Significant Trends 188
(b) Numbers of Non-Post-Secondary Students at the Technological Institutes and CEIC Students 190
(c) Total Students in Institutional Occupational Education 191
(d) Number of Training Starts 193
(e) Sex of Students 193
(f) Teaching Staff 195
Coordination 195
(a) Department of Education, Vocational and Technical Training Subdepartment 197

(b) Department of Labour and Manpower, Manpower Subdepartment 197
(c) Canada Employment and Immigration Commission ... 198
Funding 200
II. Problems Confronting Occupational Education 204
Lack of Prestige 204
Lack of Responsiveness to Industrial and Job Market Needs 206
Dispersal of Effort 214
(a) Need for New Department of Manpower and Occupational Education 214
(b) Greater Coordination of Occupational Education Programmes 216
(c) Liaison of Occupational Education System with University System 217
(d) Liaison with Federal Government 218
Recommendations 219

6. Continuing Education 223
Continuing Education in Nova Scotia 223
(a) Private Sector Organizations 224
(b) Universities 225
(c) Government 227
Issues Raised in the Hearings 232
(a) Access 233
(i) Information about Continuing Education 233
(ii) Course Regulations 233
(iii) Availability and Scheduling 234
(iv) Distance Education 234
(v) Cost of Courses 235
(vi) Disabled Students 237
(b) Attitudes to Continuing Education 237
(c) Coordination 239
Recommendations 243

Footnotes 245

List of Recommendations 249

Appendices 263
A. Guide for the Submission of Briefs, 29 June 1983 263
B. List of Individuals, Organizations and Institutions Submitting Briefs 267
C. Schedule of Public Hearings 269

List of Tables

1: Introduction

1. Students Enrolled in Full-Time and Part-Time Degree and Diploma Courses in Nova Scotian Universities, by Sex, 1960-61 to 1983-84 13
2. Comparison of Full-Time Undergraduate University Enrolment Distributed by Field of Study, 1960-61 to 1983-84, Selected Years 15
3. Undergraduate Departments and Departmental Sections (Excluding Area Programmes), Nova Scotian Academic Institutions, 1983-84 18
4. Graduate Departments, Nova Scotian Academic Institutions, 1983-84 20
5. Enrolment in Nova Scotian Post-Secondary Institutions, 1983-84 22
6. Enrolments in University Programmes, Full-Time and Part-Time, by Sex, 1983-84 24
7. Enrolments in University Programmes, Full-Time and Part-Time, by Sex, Expressed as Percentages of Total Full-Time and Part-Time Enrolments, 1983-84 26
8. Total Undergraduate and Graduate Enrolments by Field of Study, Nova Scotian Institutions, 1984-85 28
9. Total Undergraduate and Graduate Enrolments by Field of Study as a Percentage of Total Enrolments in Individual Nova Scotian Institutions, 1984-85 29
10. Income by Type, Nova Scotian Universities, Fiscal Year Ended in 1984 31
11. Expenditures by Type, Nova Scotian Universities, Fiscal Year Ended in 1984 32

2: Universities: Issues of Quality

1. Compulsory and Elective Credits Required for Graduation from Canadian High Schools, September 1984 48

2. Compulsory and Elective Credits Required for Graduation from Canadian High Schools, September 1984, Expressed as Percentages of Total Credits Required 50
3. Difference in Median English and Mathematics Marks of Students at High School and after Admission to Dalhousie University 54
4. Women as a Percentage of Full-Time and Part-Time Undergraduate Enrolment in Nova Scotian Universities in 1970-71 and 1982-83, by Field 60
5. Women as a Percentage of Full-Time and Part-Time Graduate Enrolment in Nova Scotian Universities in 1970-71 and 1982-83, by Field 61
6. Tenured Faculty, by Rank, at Nova Scotian Universities, 1983-84 81
7. Tenured Faculty, by University, Nova Scotia, 1983-84 ... 81
8. Appointments of Women in Nova Scotian and Canadian Universities, 1970-1983 86
9. Earned Doctorates and Master's Degrees Awarded by Nova Scotian Universities, 1969-1982 86
10. Age of Faculty at Nova Scotian Institutions, 1983-84 88
11A. Projected Enrolment and Faculty Requirements, 1975-2000 (High Projection) 90
11B. Projected Enrolment and Faculty Requirements, 1975-2000 (Low Projection) 91

3: Universities: Finance

1. Universities of Nova Scotia and Selected Other Provinces, Interprovincial Comparison of 1983-84 Income as a Percentage of Total Operating Income, Excluding Ancillaries 104
2. Universities and Colleges of Nova Scotia, Total Income, Excluding Ancillary Operations, Year Ended 31 March 1984 105
3. Provincial Government Grants and Tuition Fees as a Percentage of Total Income of Nova Scotian Universities, 1983-84 106
4. Revenues Per Full-Time — Equivalent Student, Nova Scotian Universities, 1983-84 106
5. Enrolment in Nova Scotian Universities and Colleges, Full-Time — Equivalent Students, 1980-1984 108
6. Provincial Government Operating Grants to Universities, Per Full-Time Equivalent Student, All Provinces, 1983-84 110

7. Participation Rates in Nova Scotia, Full-Time University Enrolment, 1983-84 111
8. Participation Rates by Province, Full-Time University Enrolment, 1983-84 112
9. University Full-Time Enrolments, Per 1,000 of Provincial Population, All Provinces, 1983-84 113
10. University Full-Time Equivalent Enrolments, Per 1,000 of Provincial Population, All Provinces, 1983-84 114
11. Home Residences of University Full-Time Students, Nova Scotia, 1983-84 115
12. Inter-Provincial University Enrolment Data, Full-Time Students, 1983-84 115
13. Indicators of Government Support for Universities, All Provinces, 1982-83 118
14. Indices of Fiscal Capacity, Before and After Basic Equalization (Per Cent of National Average), All Provinces, 1983-84 120
15. Provincial/Federal Governments of Canada, Revenue Analysis, Year Ended 31 March 1984 121
16. Federal and Provincial Governments of Canada, Projected Annual Operating Deficits Per Capita, Year Ending 31 March 1986 121
17. Established Programmes Financing, Per Capita Post-Secondary Entitlement and Annual Percent Increases, 1977-1986 122
18. EPF Fiscal Transfers for Post-Secondary Education, as a Percentage of Provincial Operating Grants to Universities and Colleges, 1977-78 to 1984-85 124
19. Recommended University Operating Grants, Nova Scotia, 1983-84 127
20. Provincial Government Operating Grants to Universities, Nova Scotia, 1983-84 127
21. Commission Projections of Intergovernmental Transfers to Nova Scotia Required to Support Non-Home-Province Students, 1983-84 129
22. Provincial Government Grants to Nova Scotian Universities and Colleges, Allocation of Unrestricted Operating Assistance, Year Ended 31 March 1984 132
23. Provincial Government Grants to Nova Scotian Universities and Colleges, Allocation of Restricted Operating Assistance, Year Ended 31 March 1983 133
24. Undergraduate Arts, Commerce and Science, Average Tuition Fees, Full-Time Canadian Students, All Provinces, 1985-86 135

25. Major Funding of Sponsored Research in Universities, Nova Scotia, 1983-84 141
26. Provincial Research Grants As a Percentage of Sponsored Research Income in Universities, All Provinces, 1983-84 142
27. Provincial Research Grants Per Capita for Sponsored Research in Universities, All Provinces, 1983-84 143

4: Universities: Coordination
1. Advanced Undergraduate Courses with Low Enrolments in Nova Scotian Universities, 1 December 1983 156
2. FTE Faculty in Education Departments and B.Ed. and A.Ed. Graduates from Nova Scotian Institutions, 1976-77 and 1983-84 158

5: Occupational Education
1. Courses Offered at Nova Scotian Vocational Schools, 1984-85 182
2. Prerequisites for Courses Offered at Nova Scotian Vocational Schools, 1984-85 184
3. Occupational Enrolments in Nova Scotian High Schools and Vocational Schools and Post-Secondary FTE Enrolments in the Technological Institutes and Hospital Nursing Schools, 1977-1985 189
4. Enrolments in Nova Scotia Institute of Technology, 1977-78 to 1984-85 190
5. Enrolments in AVTCs, NSLSI and NSNI, 1977-1983 191
6. Adult Education Students Sponsored by Canada Employment and Immigration in Nova Scotia, 1977-78 to 1983-84 192
7. Industrial and Institutional Training Funded by CEIC. Full-Time Trainees Started, by Type of Training, Nova Scotia, 1977-78 to 1983-84, Showing Percentage of Female Trainees by Programme 194
8. Numbers and Sex of Full-Time Teachers in Regional Vocational Schools and in Federally Defined Community Colleges, 1977-78 to 1984-85 196
9. CEIC Expenditures on Industrial and Institutional Training in Nova Scotia, 1977-78 to 1985-86 199
10. Provincial Government Expenditures and Recoveries on Occupational Education, Nova Scotia, 1979-80 to 1983-84 201
11. Enrolments and Cost per Student at Vocational Schools, Nova Scotia, 1984-85 203

6: Continuing Education

1. Part-Time Enrolments in University Programmes, by Sex, 1983-84 227
2. Enrolments in Continuing Education Programmes Sponsored by the Nova Scotia Department of Education, 1983-84 229
3. Continuing Education: Public School Programme, 1983-84 229
4. Adult Education 1982-1985. Expenditures, Provincial Grants, Registration Fees 230

Charts

I. Objectives Provided by Vocational and Technical Training, Department of Education 40

Chapter One

Introduction

Post-secondary education is currently a matter of great concern throughout the western world. In the United States of America, in the United Kingdom and in Canada, there has been increasing discussion of all aspects of education over the past number of years. To an increasing degree, dissatisfaction has been expressed with the education students receive following graduation from high school.

This discussion and these expressions of dissatisfaction have prompted a large number of significant studies to be undertaken in each of the three countries. Various private and public agencies and foundations in the United States have recently expressed the most profound dissatisfaction with the educational system in that country. In Great Britain, the government is at present attempting to come to grips with the problems of finance, enrolments, staffing and redundancy in the British post-secondary system. In Canada, the Province of Ontario in particular has undertaken several studies over the past ten years in an attempt to resolve the many problems arising from the delivery of post-secondary education in that province.

The universities have also become a matter of public concern in Nova Scotia. In 1974, the Royal Commission on Education, Public Services and Provincial-Municipal Relations (the Graham Commission) presented its report on the problems facing the universities at that time. That Commission identified the main problems as restricted government grants, the need to balance public accountability against university autonomy and academic freedom, and the prospect of declining enrolments. It also concluded that there was a need for greater academic planning, which would affect the amount and distribution of government funding, and a need for a better definition of the proper objectives and functions of the universities. Greater cooperation between the universities and between them and other post-secondary institutions was foreseen to be necessary, as was a mechanism for coordination and rationalization of academic programmes. During the intervening ten years, the situation has not improved considerably, and many of the above problems still exist. In particular, the rising costs of providing post-secondary education in this province have raised questions concerning the nature, suitability and delivery of programmes and how the provincial system functions.

Terms of Reference

It was in the light of these problems and the need to provide recommended solutions that the Government of Nova Scotia created the Royal Commission on Post-Secondary Education in Nova Scotia in February of 1983. The terms of reference require the Commission to:

1. determine present and probable future needs for post-secondary education, taking into consideration

   (a) the requirements of the people, the economy and society of Nova Scotia;

   (b) opportunities for inter-institutional cooperation to further rationalize the administration and provision of post-secondary education in universities, colleges and other institutions;

   (c) standards necessary for education of students wishing to enter the professions, and the contemporary requirements of the professions;

2. examine the impact of federal fiscal arrangements on the Province's ability to maintain the existing system of post-secondary education in Nova Scotia;

3. examine the current structure, organization and financial position of post-secondary educational institutions, the legislative and administrative provisions related thereto, and the form and extent of government support;

4. explore opportunities for the improvement of the present methods of coordination and development of overall policy for post-secondary education in Nova Scotia.

The Commission felt that a more specific and detailed description of its task needed to be prepared; and accordingly, on 29 June 1983, distributed to all parties requesting it the Commission's own understanding of its remit in the document 'Guide for the Submission of Briefs to the Royal Commission on Post-Secondary Education by Individuals, Organizations, and Institutions'. This document is included as Appendix A.

Recent public statements questioning the stature of Canadian universities have increased concern about the effectiveness of our post-secondary system. A recent criticism of the Canadian post-secondary education system has declared that Canada does not possess a world-class university. Recently also the President of a Nova Scotian university has called for the establishment in Canada of a 'small, private, expensive, world-class undergraduate college' with very high entrance standards. That such comments should be made by responsible parties at a time when more human and financial

resource is being committed to post-secondary education in Canada and in Nova Scotia than ever before prompts many questions to be asked.

The Commission has undertaken the challenging and responsible task entrusted to it with a feeling of deep concern. The submissions made to the Commission and the Commission's own studies and research make it clear that in Nova Scotia, as elsewhere, there are grave problems concerning the present condition and the future state of post-secondary education. The Comission has proceeded in its inquiries conscious that its recommendations will be directed towards public policy decisions on education that will, if brought into effect, be fundamental to the educational, intellectual and economic future of this province for several decades. In its inquiries the Commission has found that there has been much debate and inquiry on post-secondary education matters over the past decade. While the Commission has found this to be both interesting and instructive, little of it bears directly or specifically upon the Nova Scotian situation. The Commission therefore has conducted its inquiry in such a way as to attempt to produce an understanding of post-secondary education, its present and future needs, in a way that without being unduly provincial will nonetheless deal with matters that are particular to Nova Scotia.

The Commission has been required to examine the broad subject of 'post-secondary education' in Nova Scotia. The area of inquiry includes all types of post matriculation education and training in the province. Too often post-secondary education is taken as synonymous with university education. It is, however, a mistake to think of the present inquiry as principally concerned with university education. Almost all aspects of vocational, technical, career and other non-university training programmes include training beyond secondary school matriculation; and the Commission is deeply concerned with these non-university programmes.

The debate about education, and especially the debate about post-secondary education, is often clouded by words that create qualitative impressions that are misleading. The words themselves are often emotive and thus distorting. It is essential therefore to begin by defining in the most exact way the terms used in this study of post-secondary education.

Education (according to the Oxford English Dictionary) is the systematic instruction, schooling or training given to the young in preparation for the work of life. Education is a systematic method of imparting knowledge to young people in a way that is both theoretical and practical. In its practical aspects it seeks to impart and develop the skills necessary for both the communication of the abstract and the implementation of the concrete.

The abstract and the concrete both being essential to human life and society, the structure and content of education are of fundamental importance. Although the two are opposite sides of the same coin; they are often presented as conflicting. It is unlikely that the theoretician — the person totally concerned with the abstract — will dismiss the practical elements of life as of no consequence. However, there is a tendency on the

other side to exalt the practical and concrete over the abstract. This is particularly true in education when it is often argued that education is of value only if it contributes to the economic benefit of society. In this argument, education is viewed as largely concerned with skills, and specifically with those skills and techniques that can produce material well-being. This view ignores the place of ethics, morality and philosophy in human nature and the need of humans not merely to live well in the material sense but to live well in the moral, ethical, social, political and aesthetic senses as well.

Throughout history mankind has been challenged by the demands to provide for its material wants and has therefore been concerned to train people in the skills and techniques needed to meet these wants. At the same time, mankind is beset by a bewildering array of moral and ethical choices, political decisions and the need to deal productively with the complexity of issues and choices arising out of personal relationships. Our educational system has therefore to deal with two types of education: the one designed to develop skills of an ever-increasing technical complexity; the other designed to develop the ability of abstract thought that deals not only with moral and ethical issues but with scientific inquiry as well. Each person must be trained in the essential skills of modern life to an appropriate level, and each of us must have his or her abilities of abstract thought and reasoning developed to their appropriate level.

The task of education is to provide this training and develop this ability. During the primary and secondary phases of education, both skills and abstract powers of reasoning are developed as preparation for life and as preparation for the vocation that graduates of our school system will follow. Ideally, our secondary school students graduate with a core of knowledge, developed skills and developed intellectual abilities that will enable them to take their place in the world and to make an appropriate contribution therein.

It is at matriculation that the educational process begins to specialize. It is recognized that not all matriculants have the same needs or abilities and therefore choice and alternatives must be provided. Some may be attracted to the practical arts and skills of vocational and technical occupations, some may be attracted to the life of the scientist, some will be attracted to social and religious service, some will be attracted to education, some will be attracted to the professions — or to any one of the variety of choices whose breadth imposes a wide range of requirements upon the post-secondary educational system.

Post-secondary education is that education and training that follows upon high school completion and for which an appropriately high level of achievement is required for admission. It includes training in technical subjects of increasing complexity, a variety of career-training programmes, advanced vocational training programmes, professional qualifications and general and specialized education in the arts and sciences over a wide range of subject areas. Post-secondary education is provided by technical schools

and colleges, vocational schools, private and public career-training facilities of various sorts, colleges and universities. Post-secondary education is a major investment in the development of skills and abilities necessary to the development and maintenance of an economically productive society, and for a society whose intellectual values and insights are commensurate with the requirements of a free and liberal society with a concern for moral and ethical values.

In this report one of the concerns of the Commissioners is to suggest means by which the purposes and objectives of post-secondary education may be met in this province. To do so, it is essential that our understanding of the nature and unique features of university and occupational education are clear. During the hearings, the Commission heard a variety of opinions and interpretations as to the meaning of university education. The Commission therefore believes that a short study of the historical development and objectives of both university and occupational education must be undertaken as part of the process of defining the terms employed in the study of post-secondary education.

University Education

(a) Development

The concept of the university is European. The term is of mediaeval origin and as an institution the university is a unique product of the experience and needs of European civilization in the latter part of the so-called Dark Ages. Neither Greeks nor Romans had anything to compare with the European university. The Greeks and Romans possessed highly developed civilizations and were rich in culture, law, rhetoric, philosophy and in science. But these subjects were not organized into a comprehensive body of learning centred in a specific institution.

When the Roman Empire in the west fell in the face of the barbarian invasions, and with the rise of the territorial states, the ancient learning of Greece and Rome almost disappeared. Learning did not, however, disappear. The Christian church survived the shock of the barbarian kingdoms and the monasteries of Christendom became the refuge of ancient learning. The mediaeval monastic orders were strong in purpose and in resource. They were able to stand as protectors of learning as well as its rediscoverers. The ancient classic learning of Greece and Rome which had been submerged in the process of social and intellectual disintegration that heralded the Dark Ages was rediscovered by them and remained as their protected preserve. Whole areas of knowledge had disappeared and had to be rediscovered, and the monks — especially those in the Benedictine monasteries of southern Europe — performed an enormous service in rediscovering this knowledge of the past. It was through their efforts that Aristotle was rediscovered and became the guiding intellectual and philosophic light of the emerging intellectual consciousness of Europe.

At the same time as the monks were about their work of rediscovery, the cathedral clergy of western Europe were busy with teaching and instruction. Each diocese had its own cathedral school which catered both to aspirants to the priesthood and to lay students. It was in the cathedral schools that the 'seven liberal arts' developed. Made up of the Trivium and the Quadrivium, the first consisting of grammar, rhetoric and logic, the second made up of arithmetic, astronomy, music and geometry, the seven liberal arts provided the core of the mediaeval curriculum. While on the whole the academic curriculum stressed orthodoxy and intellectual conformity, it nonetheless provided the arts of language, of argument and of rational thought which were then exercised in arithmetic, geometry, astronomy and music. It was on this basis that the universities were founded.

During the eleventh century, the pace of scholarship quickened in monastery and cathedral schools alike. But as it did so, much of the learning in southern and northern Europe became secular. Many of the cathedral schools moved out from under the auspices of the bishops and collegiate clergy and were developing an identity of their own as distinct communities of learning. By 1158 there were sufficient students gathered in Bologna to justify their recognition as a guild separate and distinct from the cathedral schools. The students organized thus in Bologna were known as a *studium generale*. This simply meant a school frequented from all parts. The movement in Bologna was accompanied by similar movements in northern Europe; and in Paris a particularly important *studium generale* emerged out of the cathedral school of Notre Dame. Where the *studium* in Bologna gave power to the students, the *studium* in Paris was an association of masters and scholars with a hierarchical principle — common to all guilds — firmly established as part of the community of masters and scholars. Paris was also federally organized into a number of *collegia* or colleges and became the model for similar centres of learning throughout Europe — most particularly in England, where at Oxford during the twelfth century a *studium generale* came into being as the result of the removal of dissenters from the University of Paris to Oxford.

Very quickly the word *universitas* came to displace *studium generale* as a description of this new centre of learning. The word carries with it no implication of universality. Rather it derives from the then customary official address to any body of men by a person in authority: he addressed them as *universitas vestra* ('the whole of you'). In the technical sense, it applied especially to a particular association of men (e.g., citizens of a town, a chapter of a cathedral, or members of a trade guild).

The early *studia generalia* or universities were sanctioned or authorized by a papal bull or by royal charter. Sometimes they were authorized by both. The bull or the charter conferred privileges and responsibilities upon the universities. The rights and duties in the royal charters given to the colleges of Oxford and Cambridge were carefully defined and limited, and while designed to protect the university from municipal authorities and permit them to get on with their principal jobs of learning and of ruling the young,

these charters clearly subordinated the universities to the crown, i.e., to the state.

During the thirteenth, fourteenth and fifteenth centuries, universities sprang up in all of the states of Europe. Universities thus came into being at a time when rural feudalism was giving way to the urban and commercial society that was emerging in Europe. They existed to provide learning and training for the professions: law, medicine and the church. But before providing professional training, the universities universally insisted upon the mastery by the student of the seven liberal arts — the heart of the mediaeval university. With the Renaissance the curriculum was further liberalized as the movement known as humanism made its effect felt in the universities of Europe. In the middle of the fifteenth century, the introduction of the printing press increased learning and literacy in Europe, and this combined with a rapidly emerging urban middle class to increase demands upon the universities for the training of the youth of Europe. The role of universities in the new days was to be found neither in innovation or creation but continued to be, as in the past, the teaching of received wisdom or knowledge that had been produced by others, and this remained the hallmark of the universities of Europe until the first part of the nineteenth century.

(b) Types of University Education

To summarize what has been said so far, from its inception the university has been a teaching institution that provides a liberal education and a professional education.

Liberal education, then as now, consists of subjects that are understood to be the 'liberal arts'. Originally, it meant study of those arts and sciences worthy of a free (*liber*) man as opposed to the so-called servile or mechanical skills. Today the term means studies that are directed 'to general intellectual culture; not narrowly technical or professional.' (Oxford English Dictionary) Liberal education is general education derived from the ancient seven liberal arts. Its purpose is the development of the intellectual abilities of young men and women preparatory to their taking up careers and professional or specialized education. Liberal education is composed of philosophical, literary and historical studies which introduce students to studies that develop the skills of communication, logic and critical thinking that will fit them to pursue higher studies or to assume a productive and responsible role in the world in which they will live.

Professional education is training which qualifies the individual for admission to a self-governing corporation known as a profession. Since the Middle Ages medicine and law have been taught in universities, while architecture, engineering, dentistry and accountancy are subjects that have been added more recently. Education for these professions is usually, but not invariably, built upon the foundations of the liberal arts with an appropriate mix of science, mathematics and economics to prepare the aspirant for the narrowly specialized demands of professional education. The clergy is

traditionally included amongst the professions although today it may not always fit the test of self-regulation. Nonetheless, the presence of theological training in the universities is too ancient a reality to be ignored. To an increasing degree, the education of the clergy is now carried out in seminaries or autonomous schools with varying forms of relationship with a university.

Strictly speaking, professional education is a category of **occupational education,** that is, training in the skills and techniques needed in particular occupations. At times, however, terminological distinction between professional and the rest of occupational education is useful, because of the self-regulatory nature of the professions and the universities' traditional association with training in the professional subjects.

Together, education in the Arts and Sciences, that is, liberal education, and preparation for the professions, that is, professional education, constitute **academic education,** the education provided by the university from its origins.

The stress on liberal and professional education has varied in different university systems. The curricula of the Scottish and English universities, which have strongly influenced the universities of Nova Scotia, developed differently. Oxford and Cambridge, for instance, until recently were preeminently liberal arts institutions. Until the second half of the nineteenth century they provided little else in their curricula besides classics, mathematics and divinity. The emphasis on liberal education in these two institutions was considered essential to develop the minds of those who would take up careers in public service and become the political and social leaders of England. After 1858, however, the state promoted an extensive reform of the Oxford-Cambridge system, and the offerings of these two universities were broadened to assume approximately the same shape they have at the present time. The course of studies, however, was narrowed to an intense specialization on a particular subject, a specialization that has recently been strongly criticized in British reports on higher education.

The breadth of the curriculum has always been much greater in the Scottish universities, which were heavily influenced by the sixteenth-century Scottish Reformation and the social and ethical canons of Calvinism. The Scottish universities were much concerned with the education of doctors, clergymen and teachers: the physician to heal the body, the clergyman to provide the teachings and morals, ethics and religion central to Calvinism, and the teacher educated to raise the general educational level of Scottish society. There was therefore a strong practical and moral purpose to Scottish education, with a professional emphasis in the curriculum. Nevertheless, during the eighteenth century Scottish universities afforded a much more comprehensive range of liberal studies than did their English counterparts. Edinburgh was particularly noteworthy in this regard. In the year 1708 the tiny University of Edinburgh introduced the elective system, developed in the Dutch and German universities, to its curriculum. It

strengthened its professoriate and until the 1820s remained the leading university in Britain. Scottish universities still require students to study a greater range of subjects before deciding upon a degree specialization than English universities do.

The prestige of the Scottish universities during the eighteenth century and beyond made them a primary influence on the developing university system of North America. The Canadian practice of awarding a baccalaureate after three years of study and an honours baccalaureate after four years of study including a subject studied in depth owes its origin to the Scottish system.

During the Early Modern period (from the sixteenth to early nineteenth centuries) the universities continued to be for the most part centres of teaching. Scientific research and humanistic inquiry as well as artistic and literary creativity took place outside the universities. This is not to say that there was no investigation and speculation within the universities. It is a fact, however, that such activities were usually of a minor nature. During the seventeenth and eighteenth centuries, for example, scientific research in Europe was usually carried on privately under the encouragement of such bodies as the Royal Society of England, which had been founded for the purpose of encouraging the inquiry into and discussion of natural phenomena. Similarly, the other countries of Europe — France being a special case — maintained under royal auspices academies for study and inquiry into and discussion of natural phenomena. Some research was conducted in the biological sciences in a few universities, such as Leiden in Holland, and the medical schools in some of the universities undertook fundamental work in physiology and anatomy.

But it was not until the nineteenth century that research as it is known today found its way into the accepted day-to-day activities of the universities. It was in Germany that research was first emphasized in the university curriculum, and it is perhaps no accident that this innovation came about as the German state was developing, and under the leadership of the University of Berlin, founded in 1809. The academic curriculum was liberalized and strengthened and research was introduced as a central feature of academic life. It is clear that the German universities were expected to serve national ends and purposes. There were two streams in the German universities: the one essentially preparing undergraduates for the German civil service exams; the other preparing candidates for careers in industrial and academic research and university teaching. It was this latter stream that so powerfully influenced Americans who took Doctor of Philosophy degrees from the universities of Germany and returned with them to the United States, there to reshape the American system of higher education. Although the curriculum of Oxford and Cambridge was broadened after 1877 to permit experimental science to be undertaken for the first time, this was not regarded as a central feature of either university. In the English universities, advanced inquiry and investigation was regarded more as a detached

examination of physical phenomena, as the work of Newton had been in the seventeenth century.

Post-secondary education in the western hemisphere began with the foundation of universities in Mexico and Peru in the sixteenth century. The university system in North America began in 1636 with the founding of Harvard University, which became the prototype of universities founded in the American colonies. From the beginning, Harvard, like all of the American colleges, although responsive to transatlantic influence, developed unique characteristics that reflected their response to the needs of a young society: an American answer was devised to meet American needs in higher education. This becomes very evident during the nineteenth century with the establishment of land grant colleges and the evolution of university programmes to meet the practical needs of a developing frontier society.

Almost from the beginning the American universities were a combination of liberal studies and utilitarianism. As German-trained Ph.D.s became teachers and administrators in the second half of the nineteenth century, the universities in America began to emphasize research in the humanities, social affairs and the phenomena of natural science. The Americans tended to endow these higher studies with a practical bias that was lacking in the universities in the United Kingdom, where purity of research was regarded as the hallmark of experiment and philosophic inquiry. The American universities were either required by statute or by practical circumstances to provide teaching and inquiry into agricultural and mechanical subjects, and thus at a crucial stage in the development of North American society, an occupational aspect was integrated into the North American curriculum. Thus **university education** in North America came to consist of education in the liberal arts and sciences, professional education, and elements of education in the non-professional occupations. In Europe during this period such occupational education was being provided by the foundation of separate technical institutes.

A recent report[1] sponsored by the National Institute of Education shows the extent to which professional and occupational training has expanded in the American college and university system. The report says that the 'proportion of bachelor's degrees awarded in arts and science (as opposed to professional and vocational programs) fell from 49% in 1971 to 36% in 1982.' The report goes on to relate that in community colleges, arts and science qualifications declined from 57% in 1970 to 37% in 1981 as they were displaced by occupational degrees. The conclusion of the report is that 'the college curriculum has become excessively vocational in its orientation, and the bachelor's degree has lost its potential to foster the shared values and knowledge that bind us together as a society.'

It is this American influence that together with the influence of Edinburgh and Oxford and Cambridge has been brought to bear upon the development of universities in Canada.

(c) The Universities of Nova Scotia: Their Past and Present

(i) Foundations

The universities of Nova Scotia were founded on principles that derived primarily from Scotland and England. They therefore were established in the great tradition of the seven liberal arts as tempered by humanism and the classics. As they developed during the nineteenth and twentieth centuries they were influenced by the German tradition, as embodied in American university education. At the same time the newly emerging colleges in Nova Scotia developed to meet Nova Scotian needs and requirements. In their response to local needs and their mixture of British and American influences, they came to share with other Canadian foundations a uniqueness that may properly be described as Canadian.

Nova Scotia's first higher education foundation was King's College in Windsor, founded in 1789 by the diocese of Nova Scotia with a grant of £400 from the province for capital and an annual grant of £400 for operation. Expressly intended to provide higher education of a non-American type for the province's youth of the Loyalist period, King's College was founded on the Oxford model. While it was at the start a sort of 'two Don Oxford' in the wilderness of Windsor, it was Anglican and therefore excluded non-Anglicans from its faculty and from its undergraduate body. As a result, in 1818 Dalhousie College was founded on the model of Edinburgh as a non-sectarian college with a grant of £9,750 from the Earl of Dalhousie and £2,000 from the province. Despite its non-sectarian beginnings, it appeared to fall into the hands of the Presbyterians. In response, the province's Baptists, already sponsors of an academy in Wolfville, in the year 1838 established Queen's (afterwards Acadia) College in that town with a specific disavowal of religious tests. Religious tests were also rejected in 1841 when Saint Mary's was founded as a Roman Catholic college in Halifax, and in 1855 when Saint Francis Xavier was incorporated as a Roman Catholic college in Antigonish, having been founded two years previously as a seminary in Arichat.

Most of the foundations in the later nineteenth century were Roman Catholic. Mount Saint Vincent was founded as a teachers college in 1873 by the Sisters of Charity. Between 1914 and 1941 it was affiliated with Dalhousie, and became the only women's degree-granting institution in Canada in 1925. Mount Saint Bernard women's college, founded in 1883, affiliated itself with Saint Francis Xavier in 1894. In the year 1890 the Eudist fathers established a *collège classique* (combination high school/college) at Pointe de l'Eglise (Church Point) in Digby County to accommodate the Acadian Roman Catholics in western Nova Scotia. By the close of the century, therefore, there existed a decentralized university/college system, geographically dispersed and having resisted all attempts at centralization or even association for examination purposes. After 1881 none of the colleges — most of them soon to be universities — received any provincial grants.

Throughout their early history these foundations remained small and struggling centres. Two colleges had in fact to suspend operations temporarily, and King's moved its faculty to Halifax and entered a loose association with Dalhousie in 1923 upon failing to raise the funds required to rebuild its main building in Windsor after a fire. The academic curriculum consisted at first of non-elective programmes in which theology, the classics, mathematics and philosophy dominated. Quite early on some descriptive science was added; and before the nineteenth century ended, history, literature, political economy and experimental science were introduced into the curriculum. A medical school and law school were founded in Halifax and were incorporated into Dalhousie.

While the universities' fortunes improved in the twentieth century, the original characteristics continued until about 1960. Faculties were small but well selected, student bodies were small, and the courses offered for the B.A. and B.Sc. were restricted in scope. Elective courses were severely restricted with the main emphasis given to a core curriculum in which the classical arts and science subjects were dominant. With the agreement of all the universities and colleges, professional education in medicine and law was limited to Dalhousie University, while the specialist years of professional education in engineering were limited to the Technical College, founded in 1907.

(ii) Developments in the 1960s and 1970s

As in the rest of Canada, the twenty years following 1960 brought a great expansion in the number of students, reorganization of degree-granting institutions and a slight increase in their number, changes in the curriculum, and radical changes in the system of university funding.

Enrolments experienced a spectacular increase as the post-war baby-boom generation came of university age during the 1960s and 1970s. Numbers tapered off slightly in the late 1970s, and rose again until the present, after which projections indicate decline. Table 1 shows that in 1960-61 there were 5,811 full-time students in Nova Scotian post-secondary institutions; ten years later, there were 15,820 (an increase of 172%); in 1980-81 there were 18,014 and in 1983-84, 22,249, for a total increase of 283% over twenty-three years.

Graduate enrolments rose very greatly during the period, from 147 in 1960-61 to 1,752 in 1983-84, a rise of no less than 1,092%. Whereas graduate students represented only 2.5% of the full-time student population at the beginning of the period, they represented 8.8% by 1983-84.

Although part-time statistics are unreliable prior to 1975-76, the available figures indicate a considerable increase in the total number of students taking less than the full load of courses. In 1962-63 there were 1,348 part-timers, in 1983-84, 7,006 (a rise of 420%), with the greatest increase occurring in the 1970s.

TABLE 1
Students Enrolled in Full-Time and Part-Time Degree and Diploma Courses in Nova Scotian Universities, by Sex
1960-61 to 1983-84

	1960-61[a]	1962-63[a]	1970-71	1980-81	1983-84
Full-Time					
Undergraduate	5,664	6,792	14,601	16,366	19,975
Male		4,961	8,862	8,422	10,278
Female		1,831	5,739	7,944	9,697
% Female		27.0%	39.3%	48.5%	48.6%
Graduate	147	242	1,132	1,259	1,752
Male		207	852	766	1,150
Female		35	280	493	602
% Female		14.5%	24.7%	39.2%	34.4%
Other				389	522
Male				180	273
Female				209	249
% Female				53.7%	47.7%
Total Full-Time	5,811	7,034	15,820	18,014	22,249
Male	4,317	5,168	9,783	9,368	11,701
Female	1,494	1,866	6,037	8,646	10,548
% Female	25.7%	26.5%	38.2%	48.0%	47.4%
Part-Time					
Undergraduate		1,237	2,358	2,315	2,526
Male		395	1,014	864	965
Female		842	1,344	1,451	1,561
% Female		68.1%	57.0%	62.7%	61.8%
Graduate		111	400	786	854
Male		77	295	455	467
Female		34	105	331	387
% Female		30.6%	26.3%	42.1%	45.3%
Other				3,205	3,626
Male				1,222	1,381
Female				1,983	2,245
% Female				61.9%	61.9%
Total Part-Time		1,348	2,876	6,306	7,006
Male		472	1,346	2,541	2,813
Female		876	1,530	3,765	4,193
% Female		65.0%	53.2%	59.7%	60.0%

Notes
a: In these years there was some confusion regarding the undergraduate or graduate status of some students in social work and theology.

Observations
1. Does not include Teachers College, Land Survey Institute and other institutions classified as Community Colleges by Statistics Canada.
2. Institutional enrolment totals may differ from official totals in 1980-81 and 1983-84 due to the inclusion here of all students enrolled including co-op students and auditing students.
3. In 1980-81 part-time enrolments for the Agricultural College were unobtainable.
4. Undergraduate includes baccalaureates, first professional degrees and undergraduate diplomas and certificates. Before 1980-81 includes some courses thereafter listed as 'Other'.
5. Graduate includes masters, doctorates and graduate diplomas and certificates. Before 1980-81 includes some courses thereafter listed as 'Other'.
6. 'Other' programmes include testamur, master's qualifying year, post-bachelor's courses, undergraduate and graduate level courses, undergraduate preliminary year, licentiate.
7. Part-time enrolments record actual numbers of students enrolled, not full-time equivalents.

Sources:
1960-61, 1962-63, 1970-71: Statistics Canada Catalogue 81-204.
1980-81, 1983-84: MPHEC.

Demographic studies suggest that the size of the 18- to 24-year-old cohort in the Maritime population peaked in 1983-84 and, given level participation rates, that total enrolment may be expected to decline substantially over the next fifteen years.[2] It may be noted that as matters now stand, the total full-time and part-time enrolment of all Nova Scotian universities combined is less than the enrolment at the University of Toronto alone.

Much of the increased enrolment since the 1960s has been due to larger numbers of women students. In 1960-61, they constituted 25.7% of the full-time students, in 1983-84, 47.4% (slightly down from 48.0% in 1980-81). Women have traditionally formed the majority (about 60%) of part-time students, though the years since 1960 have seen greater numbers of male part-timers.

These years saw a consolidation of theological colleges in Nova Scotia and non-confessional status or dissociation from religious teaching orders for many of the institutions previously closely connected with a religious body. Holy Heart Seminary (founded in 1895) combined resources with the Divinity Faculty of King's College and Pine Hill Divinity College (founded 1875) to form the Atlantic School of Theology in 1971. In 1966 Mount Saint Vincent acquired full university status and in 1968 became substantially independent of the Sisters of Charity. In the same year Acadia became independent of the Baptist Church, though an autonomous Baptist Divinity College was established on campus and the United Baptist Convention of the Atlantic Provinces continues to name governors to the board. Saint Mary's became independent of the Archdiocese of Halifax in 1970 and Sainte-Anne ended its connection with the Eudists in 1971.

If the degree-granting powers of the Atlantic School of Theology were simply a continuation of those previously enjoyed by its constituent institutions, three new degree-granting institutions have been added to the number since 1960: the Nova Scotia College of Art and Design in 1969, the Nova Scotia College of Agriculture in 1980, and the University College of Cape Breton in 1982. The University College is the result of a merger in 1974 of Xavier Junior College of Saint Francis Xavier University (founded 1951) with the Eastern Institute of Technology (founded 1968). As its name implies, its degree-granting powers are limited to certain subjects and programmes only. The previous history of the Agricultural College and the College of Art and Design is considered later in this chapter.

The nature of university studies has changed considerably during the period. Further occupational studies on the American pattern were introduced in the 1960s, but enrolment in occupational programmes at the expense of Arts did not occur until the recessionary 1970s, as shown in Table 2. For example, between 1960 and 1980 full-time undergraduate enrolments in Commerce/Business Administration experienced a steady growth, rising from 10.1% to 21.5% of the total enrolment. There were, moreover, significant changes in programme structure. Whereas previously degree

TABLE 2
Comparison of Full-Time Undergraduate University Enrolment Distributed by Field of Study
1960-61 to 1983-84, Selected Years

Discipline	1960-61 Enrol.	1960-61 % of Total	1970-71 Enrol.	1970-71 % of Total	1975-76 Enrol.	1975-76 % of Total	1980-81 Enrol.	1980-81 % of Total	1983-84 Enrol.	1983-84 % of Total
Arts	1,712	30.2	5,694	38.8	4,844	29.3	4,397	26.3	5,680	27.5
Science	949	16.8	2,424	16.5	3,158	19.1	3,038	18.1	4,211	20.4
Arts or Science	—	—	—	—	478	2.9	5	0.0	1	0.0
Agriculture	101	1.8	167	1.1	120	0.7	195	1.2	226	1.1
Bus. Ad.	569	10.1	1,678	11.5	2,236	13.5	3,592	21.5	3,935	19.1
Education	265	4.7	1,226	8.4	1,677	10.1	1,186	7.1	1,151	5.6
Eng./Archit.	1,017	18.0	1,050	7.2	832	5.0	1,380	8.2	1,803	8.7
Enviro. Stud.	—	—	—	—	27	0.2	25	0.2	44	0.2
Fine/App. Arts	30	0.5	467	3.2	412	2.5	563	3.4	702	3.4
Dentistry	53	0.9	95	0.7	105	0.6	98	0.6	134	0.7
Medicine	270	4.8	438	3.0	379	2.3	384	2.3	383	1.9
Misc. Health	—	—	71	0.5	—	—	126	0.8	200	1.0
Nursing	60	1.1	382	2.6	615	3.7	444	2.7	465	2.3
Pharmacy	48	0.9	155	1.1	222	1.3	236	1.4	238	1.2
Household Sci.	115	2.0	392	2.7	409	2.5	316	1.9	342	1.7
Law	103	1.8	346	2.4	446	2.7	450	2.7	460	2.2
Religion	190	3.4	62	0.4	76	0.5	96	0.6	171	0.8
Unclassified	182	3.2	14	0.1	506	3.1	217	1.3	503	2.4
Totals	5,664	100.0	14,661	100.0	16,542	100.0	16,748	100.0	20,649	100.0

Observations
1. Percentage totals may not add up to 100.0%, due to rounding.

Sources:
Statistics Canada
1960-61: Catalogue 81-204
1970-71, 1975-76: Catalogue 81-569, Agriculture, 81-222
1980-81, 1983-84: Catalogue 81-229; Agriculture in 1980-81 from 81-222

programmes included a strong core curriculum required of all students for graduation, the 1960s and 1970s saw a marked decline in the number of courses all students were expected to take in common. In occupational programmes there was a movement towards intense concentration on courses within the subject of specialization, while general students' programmes were structured, if at all, by the requirement to take courses in a few broad subject areas (area or distribution requirement). Specialization and the lack of structure in general programmes have led to course proliferation within the Nova Scotian university system. From the studies the Commission has undertaken on course proliferation and duplication, it is persuaded that both exist to a degree that is significant. This matter is discussed on pp. 155 and 156.

(iii) Provincial Funding: MPHEC

The 1960s and 1970s also saw the return of substantial provincial funding for the universities and the introduction of intermediary bodies which advised government concerning suitable levels of funding. The provincial government had not funded universities since 1881, when the University of Halifax failed. The University of Halifax, founded in 1876 on the model of the University of London, was to act as an examining body for the graduating classes of the other universities of the province (and Mount Allison) so as to ensure uniform standards among graduates. It was also intended to foster cooperation among the universities. The other universities, however, generally declined to cooperate with the central institution, leading an exasperated government to end all grants to the universities when the University of Halifax closed in 1881. (Ironically, the act of incorporation of the University of Halifax remains on the statute books.)

In 1963 the province returned to funding the universities on a general basis, though it had been funding some programmes previously, such as the Dalhousie Faculty of Medicine which was funded from 1939 onwards. To respect university autonomy, the University Grants Committee (UGC) was established as an intermediary body between the universities and government to allocate operating grants according to a weighted enrolment formula.

Provincial involvement was in many ways a response to increased federal involvement in university funding. Beginning in 1951, in fulfilment of the recommendations of the Massey Report, the federal government paid universities a grant based on provincial population. In 1967, however, provincial pressure, especially from Ontario and Quebec, forced the federal government to end its programme of direct assistance to the universities, except for research grants and some special projects. Instead, the federal government paid the provinces a sum amounting to half of the allowable operating expenditures of all post-secondary (post junior matriculation) education institutions as an unconditional grant. From 1967, therefore, the province became the direct provider of funds for the universities though,

then as now, a substantial fraction of the sums provided came originally from the federal government. In 1977, Established Programmes Financing (EPF) was introduced, providing for the transfer of cash and a specified number of federal tax points to the provinces for the purposes of health care and post-secondary education.

In 1974, as a result of the Maritime Union Study, the three Maritime provinces agreed to establish a joint intermediary body to advise the three governments on the funding required by the universities and certain other post-secondary institutions in their separate jurisdictions. The justifications for the new Maritime Provinces Higher Education Commission (MPHEC) were: the existence of specialized facilities in certain universities that served the entire region and not just the province in which they were located; the small size of the region; and the cost of staffing three separate commissions. The chairmen of the existing grants commissions, however, objected to the new creation on the grounds that it could only work given political union or a very high level of cooperation among the three Maritime provincial governments.[3] Otherwise, the separate interests of the three governments would cause them to disregard the MPHEC's advice and to work outside the MPHEC in establishing priorities to meet the post-secondary needs of the individual provinces.

MPHEC, discussed in greater detail in Chapter 4, continues as the sole intermediary body in the Maritime provinces. It currently advises the Nova Scotian government on the financing of fourteen post-secondary institutions in the province. These are (with their locations):

Acadia University	Wolfville
Atlantic School of Theology	Halifax
Dalhousie University	Halifax
Mount Saint Vincent University	Halifax
Nova Scotia Agricultural College	Truro
Nova Scotia College of Art and Design	Halifax
Nova Scotia Land Survey Institute	Lawrencetown, Anna.
Nova Scotia Teachers College	Truro
Saint Mary's University	Halifax
Saint Francis Xavier University	Antigonish
Technical University of Nova Scotia	Halifax
Université Sainte-Anne	Pointe de l'Eglise
University College of Cape Breton	Sydney
University of King's College	Halifax

The Land Survey Institute and Teachers College are considered below under occupational education, as they are not degree-granting institutions, though statistical information relevant to Teachers College is considered in this section.

TABLE 3
Undergraduate Departments and Departmental Sections (Excluding Area Programmes), Nova Scotian Academic Institutions
1983-84

	Acad.	AST	Dal./ UKC	MSVU	NSAC	NSCAD	NSTC	SFXU	SMU	TUNS	UCCB	UKC	USA	No. of Inst.
Religion	x	x	x	x				x	x		x			7
Arts														
Anthropology			x	x				x	x		x			5
Celtic Studies	x		x					x			x			2
Classics	x		x	x	x		x	x	x		x		x	4
Economics	x		x	x			x	x	x					3
English	x		x				x	x	x		x			4
French	x		x	x			x	x	x		x		x	8
Geography							x		x					1
German	x		x	x					x		x			3
History	x		x	x			x	x	x		x		x	5
Modern Languages									x					1
Philosophy	x		x	x			x	x	x		x			4
Political Science	x		x	x				x	x		x			3
Russian	x		x						x					1
Sociology	x		x	x			x	x	x		x		x	5
Spanish								x	x					2
Sciences														
Astronomy			x						x					1
Biochemistry	x		x	x	x		x	x	x		x		x	6
Biology	x		x	x	x		x	x	x		x		x	6
Chemistry	x		x	x				x	x					2
Computer Science	x		x						x					1
Geology	x		x	x	x		x	x	x	x	x		x	7
Mathematics	x		x	x	x		x	x	x	x	x		x	7
Microbiology			x											1
Oceanography	x		x		x			x	x	x	x			5
Physics	x		x	x			x	x	x		x		x	5
Psychology														
Statistics														

Table 3 (continued)

	Acad.	AST	Dal./ UKC	MSVU	NSAC	NSCAD	NSTC	SFXU	SMU	TUNS	UCCB	UKC	USA	No. of Inst.
Applied Arts														
Architecture										x				1
Art	x			x		x	x	x			x			6
Music	x		x				x	x						4
Theatre			x											1
Applied Sciences														
Agriculture					x					x				2
Engineering	x		x		x			x	x		x			6
Occupational														
Bus. Admin.	x		x	x	x			x	x		x		x	8
Child Studies				x										1
Dental Hygiene			x											1
Design						x				x				2
Education	x		x	x			x	x	x				x	7
Gerontology				x										1
Home Economics	x			x			x	x						4
Journalism												x		1
Nursing			x					x						2
Occ. Therapy			x											1
Pharmacy			x											1
Physical Ed./Rec.	x		x				x	x			x			5
Physiotherapy			x											1
Public Admin.			x											1
Public Relations				x										1
Secretarial Arts	x			x				x			x		x	5
Social Work			x											1
Speech Commun.											x			1

Observations

1. Isolated course offerings in specific subjects are not included in this table.
2. Departments teaching intimately related subjects are grouped under one heading: thus Accounting and Marketing are found under Business Administration.
3. Conversely, distinct subjects taught in one department are generally separated: thus French and Spanish appear separately, though often found in the same department.
4. Modern Languages means languages other than French, Gaelic, German, Russian and Spanish.
5. Engineering at all institutions other than TUNS is a diploma course.
6. Courses offered jointly by Dalhousie and King's are found under Dal/UKC: courses unique to King's, except the Foundation Year, are found under UKC.

Source:
University calendars, 1983-84.

TABLE 4
Graduate Departments, Nova Scotian Academic Institutions
1983-84

	Acad	AST	Dal	MSVU	NSCAD	SFXU	SMU	TUNS	USA	No. of Insl.
Religion	x	x								2
Arts										
Celtic Studies						x				1
Classics	x		x							2
Economics	x		x							2
English	x		x							2
French	x		x							2
German			x							1
History	x		x				x			3
Philosophy			x				x			2
Political Sci.	x		x							2
Sociology	x		x							2
Sciences										
Astronomy							x			1
Biochemistry			x							1
Biology	x		x							2
Chemistry	x		x			x				3
Computer Sci.	x							x		2
Geology	x		x							2
Mathematics	x		x					x		3
Microbiology			x							1
Oceanography			x							1
Physics			x			x				2
Psychology	x		x				x			3
Statistics			x							1
Applied Arts										
Architecture					x			x		1
Art										1
Applied Sciences										
Dentistry			x							1
Engineering								x		1
Medicine			x							1
Occupational										
Bus. Admin.			x				x			2
Education	x		x	x		x	x		x	6
Envir. Studies			x					x		1
Food Science				x						1
Home Economics										1
Human Comm. Disorders			x							1
Law			x							1
Library Science			x							1
Nursing			x							1
Pharmacy			x							1
Phys. Ed./Rec.	x		x							2
Public Admin.			x							1
Social Work			x							1
Urban Planning							x			1

Observations: See Table 3

Source: University calendars, 1983-84.

(iv) The Universities at Present

Of the twelve institutions that grant degrees, seven are located in Halifax, and the rest are in towns and cities from one end of the province to the other. One institution is in Sydney, one in Antigonish, one in Truro, one in Wolfville and one in Pointe de l'Eglise. There is thus a great diversity in the geographical setting of these institutions, from small rural towns through larger centres to the provincial metropolis. The diversity is increased by the fact that this is a bilingual system. While in eleven institutions the predominant language is English, the Université Sainte-Anne is French-speaking.

Some of these institutions specialize in occupational education, others in academic education, some offer degrees, some do not; indeed in a few institutions all these possibilities may be found in combination. Tables 3 and 4 give an idea of the number of undergraduate and graduate departments in various fields at various institutions.

Degree-granting institutions whose specialization in job-related programmes puts them on the borderline between occupational and academic education are the Atlantic School of Theology, the Agricultural College, the College of Art and Design and the Technical University. Some institutions clearly have a foot in both camps, offering both non-degree occupational programmes and degree or degree-preparatory academic programmes. These are the University College of Cape Breton and the Université Sainte-Anne.

Universities that are in the traditional academic mould are Acadia, Dalhousie, Mount Saint Vincent, Saint Mary's, Saint Francis Xavier and King's.

There are great differences in the numbers of students on the various campuses, as may be seen in Tables 5 and 6. In terms of full-time equivalents, that is, after conversion of the number of part-time students to their full-time equivalents, it can be seen that there is a group of seven institutions with less than 1,000 FTE students; a group of six institutions with between 1,000 and 5,000 FTE students; and one institution with FTE enrolment greater than 5,000.

The small institutions, in order of increasing size, are: the School of Theology (131), Sainte-Anne (271), the Agricultural College (464) (244 academic), King's (497) and the College of Art and Design (575). The medium-sized institutions are: the Technical University (1,137), the University College of Cape Breton (2,211) (1,561 academic), Mount Saint Vincent (2,292), Saint Francis Xavier (2,640), Acadia (3,711) and Saint Mary's (3,855). The single large university is, of course, Dalhousie with 8,698 FTE students.

The 23,479 full-time students make up about 87% of the provincial FTE enrolment. While part-time students make up only about 13% of the FTE enrolment, their numbers are larger than this percentage would suggest. Table 5 shows a total of 3,446 FTE part-timers if Teachers College is excluded; Table 6 shows that this figure actually represents some 7,006 part-

TABLE 5
Enrolment in Nova Scotian Post-Secondary Institutions
1983-84

Institution	A Degree Full-Time	B Tech/C.C. Full-Time	C Total Full-Time	D Degree FTE of Part-Time	E Total FTE of Part-Time	F Degree Total FTE	G Total FTE	H D as % F	I E as % G
Acadia University	3,256.00	—	3,256.00	455.07	455.07	3,711.07	3,711.07	12.26	12.26
Atlantic School of Theology	104.00	—	104.00	27.44	27.44	131.44	131.44	20.88	20.88
Dalhousie University[a]	7,814.00	—	7,814.00	884.10	884.10	8,698.10	8,698.10	10.16	10.16
Mount St. Vincent University	1,771.00	—	1,771.00	520.83	520.83	2,291.83	2,291.83	22.73	22.73
N.S. Agricultural College	242.00	218.00	460.00	2.20	4.10	244.20	464.10	0.90	0.88
N.S. College of Art and Design	490.00	—	490.00	84.75	84.75	574.75	574.75	14.75	14.75
N.S. Land Survey Institute	—	113.00	113.00	—	—	—	113.00	—	—
N.S. Teachers College	330.00	—	330.00	177.30	177.30	507.30	507.30	34.95	34.95
St. Mary's University	3,131.00	—	3,131.00	723.81	723.81	3,854.81	3,854.81	18.78	18.78
St. Francis Xavier University	2,483.00	—	2,483.00	156.60	156.60	2,639.60	2,639.60	5.93	5.93
Technical University of N.S.	1,032.00	—	1,032.00	105.29	105.29	1,137.29	1,137.29	9.26	9.26
Univ. College of Cape Breton	1,195.00	650.00	1,845.00	366.20	366.20	1,561.20	2,211.20	23.46	16.56
University of Kings College	492.00	—	492.00	5.30	5.30	497.30	497.30	1.07	1.07
Université Sainte-Anne	158.00	—	158.00	112.70	112.70	270.70	270.70	41.63	41.63
Total	22,498.00	981.00	23,479.00	3,621.59	3,623.49	26,119.59	27,102.49	13.87	13.37

Note:
a. Includes 37.61 FTE (4 Full-Time and 33.61 Degree FTE of Part-Time) formerly at the Atlantic Institute of Education.

Source: MPHEC, *Annual Report*, 1983-84.

time students attending the same group of institutions.

In FTE terms most part-timers attend Dalhousie University (884), followed by Saint Mary's (724), Mount Saint Vincent (521), Acadia (455) and UCCB (366), with the other institutions further down the scale. In terms of the importance of part-time enrolment on individual campuses, however, the scale is almost reversed. Expressed in FTE terms, column H on Table 5 shows the percentage of the total number of students in degree courses that is made up of part-time students, while Column I shows part-timers as a percentage of the total enrolment. These calculations show that part-time registration is most important to the Université Sainte-Anne, being 41.6% of the FTE enrolment there. There follow the Teachers College (35.0%), UCCB (23.5% in degree courses, though only 16.6% overall), Mount Saint Vincent (22.7%), the Atlantic School of Theology (20.9%) and Saint Mary's (18.8%). In the other institutions part-time enrolment is of moderate importance, though, as can be seen, King's is preeminently a full-time institution. A caveat should be entered concerning the Agricultural College: since students in the many short-term non-degree courses in agricultural techniques that are offered at the College are not recorded in the MPHEC figures, the importance of part-time studies at that institution is probably under-represented in the table.

Table 6 and, more particularly, Table 7, indicate the most obvious characteristics of the student body. Only three institutions have a significant full-time graduate population, namely Dalhousie (17.0%), the Technical University (14.8%) and the Atlantic School of Theology (10.6%), though in terms of absolute numbers Acadia must be added to the group. Graduates represent a significant percentage of the part-time enrolment at the same institutions: the Technical University (73.1%), the School of Theology (36.2%) and Dalhousie (22.1%).

Most institutions now have approximately equal numbers of male and female students on campus, with neither sex representing less than 40% or more than 60% of the enrolment, though there are some exceptions. At the School of Theology, Saint Mary's and the Technical University, men constitute over 60% of the full-time enrolment, while at Mount Saint Vincent and Sainte-Anne over 60% of full-time students are women. The extreme cases are the Technical University (88.5% men) and Mount Saint Vincent (86.6% women). In part-time studies, where women have traditionally formed the majority, there is a reasonable balance between the sexes at most institutions, though over 60% of part-timers at the Technical University are men, while over 60% are women at UCCB, King's, Sainte-Anne and Mount Saint Vincent. Again the extreme cases are Mount Saint Vincent (78.5%) and the Technical University (86.6%).

Tables 8 and 9 indicate the total undergraduate and graduate enrolments by field of study in the various institutions. These figures, whose complete analysis would be too extensive for the space available here, suggest the disciplinary emphases at the various institutions. Traditionally, as appears from Table 2, the Arts, Social Science and Science core of the university has

TABLE 6
Enrolments in University Programmes, Full-Time and Part-Time, by Sex
1983-84

	Undergraduate			Graduate			Other			Total		
Acadia	F	M	T	F	M	T	F	M	T	F	M	T
FT	1,352	1,764	3,116	45	64	109	13	18	31	1,410	1,846	3,256
PT	127	104	231	42	50	92	290	189	479	459	343	802
AST												
FT	29	49	78	2	9	11	3	12	15	34	70	104
PT	1	1	2	12	9	21	17	18	35	30	28	58
Dalhousie												
FT	3,105	3,185	6,290	479	853	1,329	84	107	191	3,665	4,145	7,810
PT	399	191	590	164	184	348	380	260	640	943	635	1,578
MSVU												
FT	1,515	224	1,739	12	1	13	26	15	41	1,553	240	1,793
PT	393	109	502	67	27	94	637	164	801	1,097	300	1,397
NSAC												
FT	128	114	242	—	—	—	—	—	—	128	114	242
PT	—	—	—	—	—	—	9	6	15	9	6	15
NSCAD												
FT	269	199	468	6	9	15	5	2	7	280	210	490
PT	28	19	47	3	—	3	17	15	32	48	34	82
St.F.X.												
FT	1,199	1,217	2,416	16	18	34	8	27	35	1,223	1,262	2,485
PT	44	28	72	17	22	39	116	72	188	177	122	299

TABLE 6 (continued)

	Undergraduate			Graduate			Other			Total		
	F	M	T	F	M	T	F	M	T	F	M	T
SMU												
FT	1,118	1,870	2,988	25	54	79	27	37	64	1,170	1,961	3,131
PT	256	286	542	72	87	159	366	400	766	694	773	1,467
TUNS												
FT	106	825	931	20	142	162	—	—	—	126	967	1,093
PT	—	—	—	10	88	98	8	28	36	18	116	134
UCCB												
FT	615	580	1,195	—	—	—	—	—	—	615	580	1,195
PT	299	221	520	—	—	—	299	172	471	598	393	991
UKC												
FT	177	212	389	—	—	—	68	35	103	245	247	492
PT	6	4	10	—	—	—	4	2	6	10	6	16
U.Ste.A												
FT	84	39	123	—	—	—	15	20	35	99	59	158
PT	8	2	10	—	—	—	102	55	157	110	57	167
TOTALS												
FT	9,697	10,278	19,975	602	1,150	1,752	249	273	522	10,548	11,701	22,249
PT	1,561	965	2,526	387	467	854	2,245	1,381	3,626	4,193	2,813	7,006

Observations

1. Part-time enrolments indicate actual number of students enrolled, not full-time equivalents.
2. For NSAC, UCCB and U.Ste.-Anne, university level enrolments only.
3. Different methods of counting other programmes account for differences in totals from Table 5.

For other explanations and qualifications, see observations on Table 1.

Source: MPHEC.

TABLE 7
Enrolments in University Programmes, Full-Time and Part-Time, by Sex
Expressed as Percentages of Total Full-Time and Part-Time Enrolments
1983-84

	Undergraduate			Graduate			Other			Total		
	F	M	T	F	M	T	F	M	T	F	M	T
Acadia												
FT	41.5	54.2	95.7	1.4	2.0	3.4	0.4	0.6	1.0	43.3	56.7	100.0
PT	15.8	13.0	28.8	5.2	6.2	11.5	36.2	23.6	59.7	57.2	42.8	100.0
AST												
FT	27.9	47.1	75.0	1.9	8.7	10.6	2.9	11.5	14.4	32.7	67.3	100.0
PT	1.7	1.7	3.5	20.7	15.5	36.2	29.3	31.0	60.3	51.7	48.3	100.0
Dalhousie												
FT	39.8	40.8	80.5	6.1	10.9	17.0	1.1	1.4	2.5	46.9	53.1	100.0
PT	25.3	12.1	37.4	10.4	11.7	22.1	24.1	16.5	40.6	59.8	40.2	100.0
MSVU												
FT	84.5	12.5	97.0	0.7	0.1	0.7	1.5	0.8	2.3	86.6	13.4	100.0
PT	28.1	7.8	35.9	4.8	1.9	6.7	45.6	11.7	57.3	78.5	21.5	100.0
NSAC												
FT	52.9	47.1	100.0	—	—	—	—	—	—	52.9	47.1	100.0
PT	—	—	—	—	—	—	60.0	40.0	100.0	60.0	40.0	100.0
NSCAD												
FT	54.9	40.6	95.5	1.2	1.8	3.1	1.0	0.4	1.4	57.1	42.9	100.0
PT	34.2	23.2	57.3	3.7	—	3.7	20.7	18.3	39.0	58.5	41.5	100.0
St.F.X.												
FT	48.3	49.0	97.2	0.6	0.7	1.4	0.3	1.1	1.4	49.2	50.8	100.0
PT	14.7	9.4	24.1	5.7	7.4	13.0	38.8	24.1	62.9	59.2	40.8	100.0

TABLE 7 (continued)

	Undergraduate			Graduate			Other			Total		
	F	M	T	F	M	T	F	M	T	F	M	T
SMU												
FT	35.7	59.7	95.4	0.8	1.7	2.5	0.9	1.2	2.0	37.4	62.6	100.0
PT	17.5	19.5	37.0	4.9	5.9	10.8	25.0	27.3	52.2	47.3	52.7	100.0
TUNS												
FT	9.7	75.5	85.2	1.8	13.0	14.8	—	—	—	11.5	88.5	100.0
PT	—	—	—	7.5	65.7	73.1	6.0	20.9	26.9	13.4	86.6	100.0
UCCB												
FT	51.5	48.5	100.0	—	—	—	—	—	—	51.5	48.5	100.0
PT	30.2	22.3	52.5	—	—	—	30.2	17.4	47.5	60.3	39.7	100.0
UKC												
FT	36.0	43.1	79.1	—	—	—	13.8	7.1	20.9	49.8	50.2	100.0
PT	37.5	25.0	62.5	—	—	—	25.0	12.5	37.5	62.5	37.5	100.0
U.Ste.A.												
FT	53.2	24.7	77.9	—	—	—	9.5	12.7	22.2	62.7	37.3	100.0
PT	4.8	1.2	6.0	—	—	—	61.1	32.9	94.0	65.9	34.1	100.0
TOTALS												
FT	43.6	46.2	89.8	2.7	5.2	7.9	1.1	1.2	2.4	47.4	52.6	100.0
PT	22.3	13.8	36.1	5.5	6.7	12.2	32.0	19.7	51.8	59.9	40.2	100.0

For explanations and qualifications, see observations on Tables 1 and 6.
Source: MPHEC

TABLE 8
Total Undergraduate and Graduate Enrolments by Field of Study
Nova Scotian Institutions
1984-85

	Acadia	AST	Dal	MSVU	NSAC	NSCAD	NSTC	StFX	SMU	TUNS	UCCB	UKC	USteA	Subject Total
Agriculture	—	—	—	—	272	—	—	—	—	—	—	—	—	272
Architecture	—	—	—	—	—	—	—	—	—	151	—	—	—	151
Arts	832	—	991	504	—	—	—	796	1,111	—	674	243	65	5,216
Business	560	—	1,040	239	—	—	—	463	1,288	—	255	—	37	3,882
Child Study	—	—	—	244	—	—	—	—	—	—	—	—	—	244
Computer Science	308	—	142	—	—	—	—	—	—	71	35	5	—	561
Dentistry	—	—	155	—	—	—	—	—	—	—	—	—	—	155
Education	153	—	125	150	—	—	232	96	49	—	—	—	30	835
Engineering	175	—	264	—	34	—	—	87	183	796	82	—	—	1,621
Health Profs.	—	—	519	—	—	—	—	—	—	—	—	—	—	519
Home Economics	77	—	—	195	—	—	—	93	—	—	1	—	—	366
Industrial Arts	—	—	—	—	—	—	38	—	—	—	—	—	—	38
Journalism	—	—	—	—	—	—	—	—	—	—	—	106	—	106
Law	—	—	463	—	—	—	—	—	—	—	—	—	—	463
Library Science	—	—	62	—	—	—	—	—	—	—	—	—	—	62
Medicine	—	—	765	—	—	—	—	—	—	—	—	—	—	765
Nursing	—	—	362	—	—	—	—	118	—	—	—	—	—	480
Physical Ed.	236	—	328	—	—	—	56	134	—	—	6	—	—	760
Public Relations	—	—	—	203	—	—	—	—	—	—	—	—	—	203
Science	746	—	2,250	173	—	—	—	515	487	19	166	106	—	4,462
Sec. Arts	52	—	—	178	—	—	—	26	—	—	2	—	36	294
Social Science	—	—	366	9	—	—	—	—	—	—	—	56	5	436
Social Work	—	—	107	—	—	—	—	—	—	—	—	—	—	107
Theology	85	110	—	—	—	—	—	—	—	—	—	—	—	195
Vis./Perf. Arts	22	—	103	—	—	482	—	85	—	—	—	3	—	695
Total Full-Time Programmes	3,246	110	8,042	1,895	306	482	326	2,413	3,118	1,037	1,221	519	173	22,888
Coady Inst.	—	—	—	—	—	—	—	60	—	—	—	—	—	60
Non-formal progs.	42	—	—	45	2	7	—	26	90	—	—	—	—	212
FTE Part-Time	445.25	25.0	841.61	527.61	4.0	106.17	213.75	130.07	663.71	108.41	316.80	5.70	108.7	3,496.78
Total FTE	3,733.25	135.0	8,883.61	2,467.61	312.0	595.17	539.75	2,629.07	3,871.71	1,145.41	1,537.80	524.7	281.7	26,656.78

Observations
1. Enrolments in certain subjects are included under other subject headings at certain institutions; thus Computer Science is included under Business at Saint Mary's.

Source: MPHEC

TABLE 9
Total Undergraduate and Graduate Enrolments by Field of Study as a Percentage of Total Enrolments in Individual Nova Scotian Institutions 1984-85

	Acadia	AST	Dal	MSVU	NSAC	NSCAD	NSTC	StFX	SMU	TUNS	UCCB	UKC	USteA	Subject Total
Agriculture	—	—	—	—	88.9	—	—	—	—	—	—	—	—	1.2
Architecture	—	—	—	—	—	—	—	—	—	14.6	—	—	—	0.7
Arts	25.6	—	12.3	26.6	—	—	—	33.0	35.6	—	55.2	46.8	37.6	22.8
Business	17.3	—	12.9	12.6	—	—	—	19.2	41.3	—	20.9	—	21.4	16.7
Child Study	—	—	—	12.9	—	—	—	—	—	—	—	—	—	1.1
Computer Science	9.5	—	1.8	—	—	—	—	—	—	6.9	2.9	1.0	—	2.5
Dentistry	—	—	1.9	—	—	—	—	—	—	—	—	—	—	0.7
Education	4.7	—	1.6	7.9	—	—	71.2	4.0	1.6	—	—	—	17.3	3.7
Engineering	5.4	—	3.3	—	11.1	—	—	3.6	5.9	76.8	6.7	—	—	7.1
Health Profs.	—	—	6.5	—	—	—	—	—	—	—	—	—	—	2.3
Home Economics	2.4	—	—	10.3	—	—	—	3.9	—	—	0.1	—	—	1.6
Industrial Arts	—	—	—	—	—	—	11.7	—	—	—	—	—	—	0.2
Journalism	—	—	—	—	—	—	—	—	—	—	—	20.4	—	0.5
Law	—	—	5.8	—	—	—	—	—	—	—	—	—	—	2.0
Library Science	—	—	0.8	—	—	—	—	—	—	—	—	—	—	0.3
Medicine	—	—	9.5	—	—	—	—	—	—	—	—	—	—	3.3
Nursing	—	—	4.5	—	—	—	—	4.9	—	—	—	—	—	2.1
Physical Ed.	7.3	—	4.1	—	—	—	17.2	5.6	—	—	0.5	—	—	3.3
Public Relations	—	—	—	10.7	—	—	—	—	—	—	—	—	—	0.9
Science	23.0	—	28.0	9.1	—	—	—	21.3	15.6	1.8	13.6	20.4	—	19.5
Sec. Arts	1.6	—	—	9.4	—	—	—	1.1	—	—	0.2	—	20.8	1.3
Social Science	—	—	4.6	0.5	—	—	—	—	—	—	—	10.8	2.9	1.9
Social Work	—	—	1.3	—	—	—	—	—	—	—	—	—	—	0.5
Theology	2.6	100.0	—	—	—	—	—	—	—	—	—	—	—	0.9
Vis./Perf. Arts	0.7	—	1.3	—	—	100.0	—	3.5	—	—	—	0.6	—	3.0
Total Full-Time Programmes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentages of FTE														
Full-time Programmes	87.0	81.5	90.5	76.8	95.4	81.4	60.4	91.8	80.6	90.5	79.4	98.9	61.4	85.9
Coady Inst.	—	—	—	—	—	—	—	2.3	—	—	—	—	—	0.2
Non-formal progs.	1.1	—	—	1.8	0.6	1.2	—	1.0	2.3	—	—	—	—	0.8
FTE Part-Time	11.9	18.5	9.5	21.4	4.0	17.4	39.6	4.9	17.1	9.5	20.6	1.1	38.6	13.1
Total FTE	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Observations: See Table 8.
Source: MPHEC

accounted for between about 45% and 55% of the full-time enrolment at Nova Scotian universities. Table 9 shows that universities whose enrolments in those fields of study currently fall within or near that range are Acadia, Dalhousie, Saint Francis Xavier and Saint Mary's. (Dalhousie's emphasis on Science (28.0%) over Arts (12.3%) and Social Science (4.6%) is exceptional.) Institutions where Arts, Social Science and Science account for more than 55% of the full-time enrolment may be considered to have a liberal arts college emphasis: King's College and the academic sector of the University College of Cape Breton currently fall into this category. Other institutions have an occupational emphasis; among them Mount Saint Vincent and Sainte-Anne, with 36.2% and 40.5% of their respective full-time enrolments in the Arts, Social Science and Science core. Fields of study are not listed for part-time students, because of the difficulty of classifying such students in a disciplinary programme.

Tables 10 and 11 indicate the gross income and expenditures of Nova Scotian universities for the fiscal year ending in 1984. A more complete financial picture will be provided in Chapter 3 but certain salient features will be noted here. Gross income in 1983-84 was $266,276,000, including $30,315,000 raised by ancillary enterprises, such as residences and bookstores (mostly accounted for under the item 'Sale of Services and Products'). Federal government grants for research constituted 8.8% of income, provincial government grants 54.8%, fees 13.8%, sale of services 11.4% and other sources, including bequests and investment income, 10.9%. By comparison with national percentages, it will be seen that the province receives less than the national average funding from most of the major research councils, though research grants from other government departments raise the total above the national average. Provincial grants represent a smaller percentage of income than nationally, while fees, sale of services and other sources represent a larger percentage.

In 1983-84, the universities' gross expenditures were $273,567,000. Salaries and benefits accounted for 66.67% of expenditures and other major items were operational supplies (9.5%), externally contracted services (mainly in ancillary enterprises) (5.1%) and utilities (4.6%). Library acquisitions accounted for only 1.5%, though this was above the national average. Total expenditures on salaries and benefits represented a similar portion of provincial and national expenditures. On the other hand, operational supplies, utilities, externally contracted services and debt repayment were more significant items of expenditure provincially than nationally.

Occupational Education

Occupational education, that is, training in the skills and techniques needed in particular occupations, is as old as mankind. Throughout much of

TABLE 10
Income by Type, Nova Scotian Universities
Fiscal Year Ended in 1984
(in thousands of dollars)

		Percentage of Income	
	$(000)	Provincial	Natl. Ave.
Federal Govt. Grants			
Soc. Sci. & Hum. Research Council	2,163	0.81	0.52
Health and Welfare Canada	366	0.14	0.28
Nat. Sci. & Eng. Research Council	8,169	3.07	3.99
Medical Research Council	4,637	1.74	1.94
Other Grants	8,128	3.05	1.77
Total Fed. Govt. Grants	23,463	8.81	8.50
Provincial Govt. Grants	145,905	54.79	64.05
Municipal Govt. Grants	—	—	.03
Foreign Govt. Grants	738	0.28	0.20
Total Govt. Grants	170,106	63.88	72.78
Fees			
Credit Courses	33,539	12.60	9.29
Non-Credit Courses	1,699	0.64	0.78
Miscellaneous Fees	1,604	0.60	0.65
Total Fees	36,842	13.84	10.72
Bequests, Donations & Non-Govt. Grants	12,742	4.79	4.97
Sale of Services and Products	30,307	11.38	7.81
Investment Income	10,920	4.10	2.58
Miscellaneous Income	5,359	2.01	1.14
Total	266,276	100.00	100.00

Source: CAUBO

history, however, formal instruction in the indispensable manual and commercial skills was the monopoly of guilds who not only imposed quotas on the admission of apprentices to the mysteries of the crafts, but also set the standards of qualification and the terms of apprenticeship as well as the norms of moral behaviour required of the apprentice. With the definitive displacement of the guild system by the industrial system in the nineteenth century, new forms of occupational education were required for novices in occupations in which apprenticeship did not continue. The result was the creation of non-university training facilities. The rise of general education and of literacy in urban industrial society, the growth of print and electronic journalism and communications together with the demands of increasingly technical industrial, transportation, communication and agricultural processes have stimulated this development.

In Germany, the need for special training and educational facilities to be provided in all developing industrial communities to cater to the technical demands of industry led to the development of hochschules, which went beyond technical training for industry to provide programmes for career

TABLE 11
Expenditures by Type, Nova Scotian Universities
Fiscal Year Ended in 1984
(in thousands of dollars)

	$(000)	Percentage of Expend. Provincial	Natl. Ave.
Academic Salaries	86,902	33.48	34.49
Other Salaries & Wages	71,584	27.58	26.51
Fringe Benefits	14,542	5.60	6.85
Total Salaries & Benefits	173,028	66.67	67.49
Travel	6,057	2.33	2.09
Library Acquisitions	3,952	1.52	1.48
Operational Supplies & Expenses	24,759	9.54	7.99
Furniture & Equipment			
Purchase	9,194	3.54	5.15
Rental & Maint.	2,654	1.02	1.03
Utilities	11,992	4.62	3.27
Renovations & Alterations	4,832	1.86	1.55
Space Rental	1,648	0.63	0.46
Scholar., Bursaries & Prizes	4,949	1.91	1.33
Externally Contracted Services	13,326	5.13	1.79
Professional Fees	1,197	0.46	0.47
Insurance	405	0.16	0.12
Property Taxes	329	0.13	0.23
Institutional Membership Fees	430	0.17	0.25
Cost of Goods Sold	5,952	2.29	2.55
Debt Repayments	8,301	3.20	2.70
Buildings	560	0.22	2.36
Land & Site Services	2	0.00	0.24
Sub-Total	273,567	105.40	102.53
External Cost Recoveries	-14,022	-5.40	-2.53
Total	259,545	100.00	100.00

Source: CAUBO

training in a variety of subjects not afforded in the universities. Similarly, in the United Kingdom, technical and mechanical institutes came into being in the later years of the nineteenth century. Some of these developed into technical universities, but most developed into colleges of further education which included in their curriculum a very wide range of advanced subject areas of both a technical and non-technical type. It is perhaps worth noting that many subjects, including pharmacy, music, accounting, electronic technology, computer operation, programming and systems analysis, and many other of the skills demanded by society have been added to the colleges of further education in the United Kingdom, whereas in Canada they are offered as part of the university system.

Non-university training facilities encompass a broader range of studies than universities do, and they possess an inherent flexibility that enables them to respond quickly to economic and social need in ways that universities would find impossible if not undesirable. In a recent comment upon the role of the non-university post-secondary college in Canada, a Canadian commentator says that:[4]

> They were established, throughout Canada, quite specifically to be instruments of economic, social, and human resource development. Unlike universities, they have no historic or legislated role as social critic, they do not require an arm's length relationship with the rest of society and so they neither need nor demand the autonomy or independence required by some sectors of universities. They do not push back the frontiers of knowledge, the concept of free inquiry is not integral to their tasks. They are not institutions for scholarly research. Their fundamental role is quite straightforward: to teach, to train (in the best sense of that word), to develop the human resource potential of this society.

(a) Development of Occupational Education in Nova Scotia

In Nova Scotia, occupational education is offered at various different levels and in many different institutions: in vocational schools, adult vocational training centres, technological institutes and, to some degree, universities. It includes vocational education, for which the academic qualifications require up to Grade X, and technical education, for which the qualifications are Grade XI and above. Strictly speaking, only technical education is post-secondary education. Since, however, for many citizens of the province vocational education is in fact the only education they receive after high school, and the subject is intimately related to technical education, the Commission feels that vocational education must be considered as part of the post-secondary system and has proceeded accordingly.

Nova Scotia was, until quite recently, primarily a commercial and agricultural society. Such vocational and technical training as was needed in the building trades, in commercial enterprise and in the limited range of secondary manufacturing carried out in the province took place either by some form of apprenticeship or on-the-job training. This situation began to change around 1900 with the establishment of a steel and heavy manufacturing industry in Nova Scotia, particularly in the Sydney, New Glasgow/Trenton, and Halifax areas. The technical demands of the steel industry and the heavy manufacturing that developed from this required a more substantial education and training response than had been the case before. Thus we find the beginning of apprenticeship programmes which were conducted entirely on site in industrial plants.

At about the same time, private commercial colleges came into being in almost every county of the province, and these provided an acceptable level of training in commercial practice such as typing, shorthand and bookkeeping of the type deemed appropriate to the maintenance of office and commercial activities.

The province is, perhaps, peculiar in that state-supported institutional occupational education was first offered at the university or college level before being offered in other institutions. In 1854, the Provincial Normal

School, now the Nova Scotia Teachers College, was founded in Truro to train students in the theory and practice of education. The College currently offers a three-year programme leading to an Associate in Education (A.Ed.) diploma which, with a further year of study in a university, qualifies the student for a B.Ed. degree.

The Nova Scotia College of Art and Design was founded in 1887 as the Victoria School of Art and Design, and incorporated in 1925 as the Nova Scotia College of Art. It adopted its present name in 1969, at which time the college was authorized to confer degrees at the undergraduate and masters level. Students may arrange to take courses for credit at other universities in Halifax. Since 1973 the college has had a cooperative agreement to share staff, facilities and library with Mount Saint Vincent so as to avoid duplication of effort.

In 1905, also in Truro, the Nova Scotia Agricultural College was founded to assume and expand the work that had been undertaken in previous years by the School of Horticulture in Wolfville and the School of Agriculture in Truro. Until 1980, graduates of the Agricultural College generally completed their degree studies at Ontario Agricultural College of the University of Guelph or MacDonald College of McGill University. In 1980, however, the College received approval to offer all four years leading to the B.Sc. [Agr.] degree, and in 1985 the College affiliated with Dalhousie University with the effect that degrees are granted jointly by the College and Dalhousie.

In 1907, the Nova Scotia Technical College, now the Technical University, was founded to provide 'facilities for scientific research and instruction and professional training in civil, mining, mechanical, chemical, metallurgical and electrical engineering or any other departments which may from time to time be added.' The Technical Education Act of 1907, which created the College, designated its Principal as the Director of Technical Education in Nova Scotia. The Director of Technical Education was entrusted with 'general supervision over the conduct and management of all schools established or carried on under' the Act. Besides the Technical College, this involved the provision of local technical schools and schools for miners.

The foundations for technical education thus laid were among the earliest in Canada, earning for Dr. Frederick H. Sexton, the prime mover in the College's creation and its first Principal, the title of 'Canadian Dean of Vocational Education'. Despite Dr. Sexton's work as Director of Technical Education (1907-1947), further technical and vocational schools were not built until after the Second World War, because of the reluctance of successive governments to invest the money necessary.

Not until 1945, when the Vocational Schools Assistance Agreement was signed with the Federal government, were plans made for extension of the occupational education system. In 1947 the Vocational Education Act ended the Principal of the Technical College's role as Director of Technical Education. A Director of Vocational Education was named, and in 1951 Halifax Regional Vocational High School opened its doors. It was the first of the fourteen vocational schools now in existence.

Towards 1960, a need was felt for technical training at the post-secondary, but non-university level, a need that was met elsewhere in Canada by the extension of the community college system. In Nova Scotia, the response was the rise of the technological institutes: in 1958, the Nova Scotia Land Survey Institute (NSLSI) in Lawrencetown, Annapolis County; in 1963, the Nova Scotia Institute of Technology (NSIT) in Halifax; in 1968, the Eastern Institute of Technology (EIT) in Sydney. In 1973 the Schools of Marine Engineering and Marine Navigation at NSIT combined to form the separate Nova Scotia Nautical Institute (NSNI) in Halifax, while in 1974 EIT became part of the new College of Cape Breton. The remaining technological institutes are funded directly by the provincial Department of Education, except for NSLSI, whose funding allocations are decided following consultation with MPHEC.

Enrolments and funding of the occupational education system are complex and are considered at length in Chapter 5.

Objectives of Post-Secondary Education in Nova Scotia

The educational system of the Province of Nova Scotia has an indispensable role to play in the protection and in the nurture of the heritage and culture of our civilization in its international, provincial, regional and national aspects. It is obvious that people living in the last quarter of the twentieth century are undergoing a revolution in communication and information that is distinctly comparable in its total effect to the experience of fifteenth century Europe when the 'New Learning' combined with the printing press to increase literacy and the thirst for learning. But the late twentieth-century information revolution has gone beyond this, for it has been accompanied by an extremely advanced technology which requires both training and learning so that it will be contained, managed and utilized for the benefit of mankind. We may expect that the next couple of generations of mankind will be participants in an equally dynamic technological, scientific and intellectual transition of enormous magnitude. If Nova Scotians are to be participants rather than spectators, it will be necessary for the province's educational system to provide the educational facilities appropriate to a new life in this new age. It is for this reason that the province deserves the best possible delivery of post-secondary education, guided by a coherent policy of post-secondary educational development.

The Commission notes with much concern that the Government of Nova Scotia has at no time formulated a policy for post-secondary education. This is not to suggest that government action has been lacking in support of post-secondary education. The universities and university programmes funded by

public monies, not to mention the government-maintained programmes of technical and vocational education, are clear evidence of government support. However, the growth of Nova Scotian post-secondary education has been incremental and lacking in clear objectives. The Commission believes that improvisatory or evolutionary policies are inefficient and that the province requires clearly stated programmes and priorities in post-secondary education so that maximum benefit to all concerned may be produced by a fully comprehensive post-secondary education system.

(a) Objectives for the University System

It is perhaps understandable why the government has not enunciated objectives for the university system. There has been concern lest government be seen to be infringing **academic freedom,** that is, 'the freedom of the individual scholar in his or her teaching and research to pursue truth wherever it seems to lead without fear of punishment or termination of employment for having offended some political, religious or social orthodoxy.' The right to academic freedom is fundamental in our society. Unfortunately, academic freedom has frequently been confused with university autonomy.

Autonomy, as understood in current usage, is that extent of self-government that is specifically granted or assigned to a political body or a society or an institution. It contrasts with sovereignty, which is the absolute and unlimited power to command or govern. Since their foundation, the universities have enjoyed the powers of self-government granted to them in their charters and acts of incorporation; in Nova Scotia, these charters and acts were granted by the provincial government. University autonomy, as granted by the university charters, may be defined as 'the power of the university or college in its corporate form to determine its own educational goals and programmes and to determine the means by which its goals and programmes will be pursued'.[5] University autonomy is embodied in the university's decisions as a corporation to enable certain disciplines to be taught and certain research programmes to be undertaken; academic freedom is enjoyed by the individual professor in the way he or she teaches a course, undertakes a research project or publishes, verbally or in print, conclusions drawn from study in his or her field of scholarly expertise.

Academic freedom is a *sine qua non* of a university in a free society; but a university's autonomy, like the autonomy of any corporation, is related to its self-sufficiency in revenue. Clearly, any corporation that is self-sufficient in revenue has the right to determine how it will spend its funds; it will also seek to spend its funds to the greatest effect possible and will attempt to avoid expenditures in excess of revenue. On the other hand, corporations which receive funding from outside sources usually find their autonomy limited to the degree that they must account to the external body for the wise stewardship of the funds they have received. The corporation continues to set its own goals, but it must first satisfy its funding agency that those

goals may be achieved in the most efficient and cost-effective way. Clearly the corporation benefits if the funding agency has intimate and sympathetic knowledge of the corporation's practices and objectives, for then the provision of funding will be more closely attuned to the corporation's needs. The agency may well, however, decide not to fund all of the corporation's projects, especially if specialized knowledge suggests that implementation of those projects is counterproductive or cost-ineffective. And a well run funding agency will retain a watching brief over the corporation to ensure that those projects it does fund are cost-effective and conducive to achievement of the corporation's own goals. The particular need for expert knowledge when decisions are made regarding the funding of a university corporation has led most governments which are responsible for funding university systems to establish agencies, in the form of government departments or intermediary bodies, that are specifically dedicated to that task.

Taking the preceding arguments into account, it is obvious that any objectives formulated by a government regarding the university system should respect the principles of academic freedom and university autonomy. Just as obviously, however, the provincial government, as the direct funding agency and representative of the taxpayers who ultimately fund the universities, has the right to require that universities be accountable for the way in which they spend the funds which the taxpayers provide. **Accountability** implies that the universities show evidence of good stewardship in the expenditure of the public funds provided to meet certain objectives that the government considers suitable to the universities' corporate function.

Formulation of objectives for the university sector of the post-secondary educational system requires great sensitivity to the delicate balance between university autonomy and justifiable accountability to the public. Certain objectives would clearly be unjustifiable. It would be unjustified, for instance, for government to require that the universities' objectives correspond to those of economic or social groups extraneous to the university or to those of the political party in power at the time. On the other hand, it is completely justifiable for government to require that universities' operations are efficient means of fulfilling objectives recognized to be proper to academic communities in the western world. And it is equally justifiable for government to require that Nova Scotian universities fulfil the objectives implied in the traditions and practice of the universities since their foundation.

Over twenty years ago the Robbins Committee in Great Britain identified the four essential objectives for a university system, and these four objectives have won widespread acceptance among the university community throughout the English-speaking world. The Commission believes that these four objectives should be the cornerstones of any list formulated by the Nova Scotian government. They are:

1. **Teaching to promote the general powers of the mind.**

2. **The advancement of learning, through research and the preservation of knowledge**. Opportunities must be provided for research in subjects of local, national and international interest at universities with appropriate facilities for such studies, and library and archival resources must be maintained to permit high standards of research and teaching.

3. **The transmission of a common culture and common standards of citizenship**. Students must be educated in scientific, political, cultural and philosophical principles enabling them to live as knowledgeable and responsible citizens.

4. **Instruction in skills suitable to play a part in the general division of labour.**

Given the need of citizens in our society to return to university, not only to acquire further job skills but to broaden their knowledge of the world and enhance their critical faculties, the Commission feels that the fifth fundamental objective for the university system must be:

5. **Provision of facilities to enable continuous learning throughout adult life.**

The traditions of Nova Scotian university education have led the Commission to recommend that the following objectives be adopted:

6. **Availability of the fundamentals of a university education in an institution within reasonable geographic proximity of the homes of qualified students.**

7. **Availability within the province and within the Maritime region of a wide, but selective, range of subjects.**

8. **Protection and nurture of the heritage and culture of the province and the region.**

9. **Service to the community in a manner compatible with the universities' teaching and research functions and intellectual interests.**

Finally, since the people of Nova Scotia have a right to know how the universities are spending the funds they receive from tax revenue, there should be:

10. **Communication with, and full accountability to, the people of Nova Scotia for the utilization of available resources in an effective and cost-efficient manner**. Such communication should occur through designated governing bodies including academic senates, university boards of governors, university/government intermediary bodies and the provincial legislature.

(b) Objectives for the Occupational System

The objectives of the occupational system are less easy to define, since some institutions with an occupational emphasis fall under the university system, while others do not have degree-granting status or are administered directly by the Government of Nova Scotia. The objectives of the university system are appropriate to the first group, which includes the Agricultural College, the College of Art and Design and the Technical University. Because of its close links with the university system, Teachers College should be added to this group. Objectives for the second group, which includes the vocational schools and technical institutes, almost all directly administered by the provincial government, are appropriately set by the government itself.

It is important, however, for the proper functioning of this second group of institutions that objectives be set, be clearly stated and be well known throughout the occupational system. The Commission has inspected the stated objectives of those agencies of government most closely concerned wit!. occupational education, namely the Manpower and Vocational and Technical Training subdepartments, and finds them to be satisfactory. ('Subdepartment' is used in this report because there is as yet no formally recognized nomenclature describing the organization headed by one of several Deputy Ministers all under the same Minister.) The objectives of Vocational and Technical training, which correspond most closely to the educational objectives of the occupational system, are printed as Chart I.

CHART I
Objectives Provided by
Vocational and Technical Training
Department of Education

Overall Objective

To provide a system of vocational and technical training for youth and for adults in Nova Scotia that is appropriate to the career aspirations of individuals and is complementary to the economic development goals of government and of industry.

Specific Objectives

1. By working closely with industry and employer groups, to develop and employ curricula that are appropriate to the skills required by the work place.
2. By means of industrial leave and other forms of staff updating and upgrading, to ensure that all instructional staff have occupational skills that are current to industrial requirements.
3. By means of close liaison with other training institutions, to develop career paths between vocational schools, technical institutes, colleges, and universities in specific occupational fields in order to facilitate the technical and professional advancement of the individual.
4. By means of cooperative education, vestibule training and related forms of training involving learning in an industrial setting, to facilitate the transition of the student from the learning environment to the work environment.
5. Maintain close cooperation with the Nova Scotia Department of Labour and Manpower in planning training programme changes in order to ensure that training programmes are related as much as possible to labour market demand.
6. Cooperate with federal authorities in planning and implementing annually a programme of training courses purchased by the Canada Employment and Immigration Commission for clients referred for training by Canada Employment Centres.
7. Under the terms of the Vocational Rehabilitation of Disabled Persons Agreement, to administer special training arrangements for those with physical or mental disabilities.
8. By means of such techniques as year-round use of facilities, extended use of facilities, and continuous intake-exit procedures, to make more effective and efficient use of facilities and equipment, and to modulate the flow of newly trained personnel to the labour market.
9. Through a system of continuing education, including grants to school boards, to provide for the academic upgrading, and vocational and technical training of adults on a part-time or full-time basis.
10. In the interest of equality of access to training, to ensure that steps are taken to ensure that all programmes are open to members of either sex.

Recommendations

The Commission recommends that:

- **The Government of Nova Scotia should establish clear objectives for post-secondary education, both university and occupational, and ensure that these objectives are widely known throughout the educational system.**

- **The Government of Nova Scotia should adopt the following objectives for university education in the province:**

  1. **Teaching to promote the general powers of the mind.**

  2. **The advancement of learning, through research and the preservation of knowledge. Opportunities must be provided for research in subjects of local, national and international interest at universities with appropriate facilities for such studies, and library and archival resources must be maintained to permit high standards of research and teaching.**

  3. **The transmission of a common culture and common standards of citizenship. Students must be educated in scientific, political, cultural and philosophical principles enabling them to live as knowledgeable and responsible citizens.**

  4. **Instruction in skills suitable to play a part in the general division of labour.**

  5. **Provision of facilities to enable continuous learning throughout adult life.**

  6. **Availability of the fundamentals of a university education in an institution within reasonable geographic proximity of the homes of qualified students.**

  7. **Availability within the province and within the Maritime region of a wide, but selective, range of subjects.**

  8. **Protection and nurture of the heritage and culture of the province and region.**

  9. **Service to the community in a manner compatible with the universities' teaching and research functions and intellectual interests.**

10. Communication with, and full accountability to, the people of Nova Scotia for the utilization of available resources in an effective and cost efficient manner. Such communication should occur through designated governing bodies including academic senates, university boards of governors, university/government intermediary bodies and the provincial legislature.

Chapter Two

Universities: Issues of Quality

A paramount concern of the Commission is that Nova Scotia should have a university system characterized by academic excellence. Prerequisite are good students, good faculty, a comprehensive but demanding curriculum and adequate resources to provide an environment where faculty may teach and research and students may learn to the best of their abilities. Those prerequisites will produce a good university: to them must be added a sense of community among students and faculty, a shared sense of excitement in the pursuit of learning and, it is hoped, of wisdom; in short, a shared sense of purpose. Then a merely good university may attain academic excellence and become a great one.

During the hearings the Commissioners were disturbed by signs that our universities are close to a serious decline in quality. The situation is not unique to Nova Scotia: in the rest of Canada, the United States and Great Britain similar commissions have detected similar symptoms of decline in quality. The problems do, however, vary from jurisdiction to jurisdiction, according to the characteristics of each system of universities.

In Nova Scotia, the Commission heard from university administrators and faculty of a severe decline in resources, a decline frequently attributed to inadequate funding, particularly provincial funding, of the universities. There are insufficient funds to develop comprehensive library holdings, let alone to keep periodical collections up to date. There are insufficient funds to expand computer facilities so as to provide enough individual terminals and mainframe capacity for all users. There are insufficient funds to maintain other scientific equipment at state-of-the-art quality. There are insufficient funds to hire more professors to teach what has been a growing student population and to maintain the buildings in which the students learn and live.

Other sources, both outside and inside the universities, indicate that there are more problems in our universities than those caused by simple lack of funds. Employers have spoken of graduates with imperfect powers of written and spoken expression and logical analysis. The employers expected that a sound curriculum and good professors would have taught students at least these fundamental skills. Members of the public were concerned that academic tenure may be protecting the academically incompetent; graduate students and, indeed, many tenured professors were concerned that the existence of large numbers of tenured faculty in Nova Scotian universities is

preventing the employment of a whole generation of younger scholars. Faculty echo the employers' statements, only they declare that the graduates of the high schools lack verbal, mathematical and analytical skills. Faculty and administrators demonstrated that students obtaining a grade entitling them to university entrance from one high school may have much less knowledge and ability than students with the same grade from another school. In return, secondary school educators assert that they have no assured means of ascertaining what level of skills and knowledge the universities want.

There are, then, widespread misgivings about the standards of students, faculty, curriculum and facilities in Nova Scotian universities today, and these misgivings are shared by the Commission. That facilities have suffered from lack of funds is all too true, but the universities' problems are too extensive and too diverse in nature to be cured, it would seem, merely by an infusion, or a reallocation, of funds. This chapter will therefore consider the non-financial problems relating to the following elements of the university: the students, the curriculum and the faculty. The next chapter will discuss financial matters that affect the allocation of physical resources.

Underlying all the other problems, however, the Commission sees the most serious problem of all: the lack of a commonly acknowledged sense of purpose among the faculty, students and administrators of our universities. Lip service is paid to the definition of a university as a centre for teaching, research and the preservation of knowledge as if merely repeating this purely operational definition would give an adequate sense of purpose. (The stress on operational aspects as opposed to educational goals is in marked contrast to Canadian universities earlier in this century, where 'If the limits of essential knowledge were not specifically defined, there appeared at least to be a consensus about the need to instil in the minds of students a "consciousness of Western values" and an appreciation of their "cultural inheritance." ')[1] Moreover, little is now said about those features of teaching and research that differentiate these activities as carried on in a university from these activities carried on in other institutions.

As a result, outside the university, there is great ignorance of what a university actually does: the general public frequently views a university as a superior high school or trade school, where teaching is undertaken during the academic year and where nothing occurs during the summer. The sole justification for university education is often considered to be its effectiveness in job training; the justification of university research is taken to be its immediate applicability to industry.

The Commission, in common with other bodies recently constituted on this continent to investigate the crisis in the universities, believes that public ignorance reflects confusion on the campuses regarding the purpose of university teaching and university research. To be more specific, there is confusion regarding which subjects should be studied and taught in a university and how they should be studied and taught. Traditionally, teaching in a university was, first of all, intended to expand students'

intellectual horizons by presenting the students with a corpus of knowledge that was both broader in scope and investigated in greater depth than anything they had previously encountered. The depth of study and the exposure to different interpretations provided a training in thought, as did the attempt to coordinate, through a structured curriculum, the subjects and courses presented for consideration. Expansion of intellectual horizons and training in thought were the purpose of a liberal education. Besides a liberal education, universities also strove to give students a training in a professional or occupational discipline. A balance between general and specific knowledge was thus the hallmark of a university education.

At present, however, many feel there is no clear purpose to university teaching. Instead of a broad yet structured education, balanced between courses in a career-oriented field and a coordinated curriculum of liberal knowledge, the student is presented with a disorganized array of intellectual specializations. The student is left pretty much on his or her own to construct an educational programme by choosing from the courses or programmes available, and the result is all too often an education with breadth but without structure or an education with structure but without breadth. On the one hand, the beginning or general arts student may choose unrelated courses to satisfy a 'distribution requirement'. On the other hand, majors, honours or career-oriented students may be required to take so many courses within their field of specialization that they are hardly exposed to any other fields of knowledge at all.

As far as the purpose of research is concerned, the problem is perhaps more lack of definition than lack of direction. There is no clear picture of what research is. Under the rubric of research are grouped a variety of activities: scholarship, theory construction, observing and chronicling, experimentation, theory testing, design, development, criticizing and elucidating, artistic creation, and consulting and advising, depending upon the institution and the discipline. In their responses to the Commission, the universities failed to distinguish these various activities one from another and all were 'research'.

Also contributing to the absence of a sense of purpose on the campuses of many of our universities is the lack of academic goals specific to each university. The academic goals of the Agricultural College and the College of Art and Design are, of course, reasonably clear. However, in a province whose total population is less than that of Montreal, Toronto or Vancouver, the attempt during the 1960s and 1970s of some of our larger institutions each to duplicate the range of course offerings of the Universities of Montreal, Toronto and British Columbia appears, in retrospect, to have been misguided. A more judicious allocation of resources would have arisen from an agreement among the institutions to promote concentration of teaching and research resources at specific universities in the province, always assuming that all universities offered a common range of fundamental courses. In this way, each university would be clearly identified with certain

disciplines, and each university's educational mission would be readily apparent. Division of academic labour would go far to eliminate the division of funds caused by unnecessary competition and would thus be conducive to the creation of centres of academic excellence. Rather than compete with departments in the other universities of the province, the researchers and teachers in departments in a Nova Scotian system of universities would be in a position to compete (and collaborate) with researchers and teachers in the other universities of the world.

In the pages that follow, the Commission will attempt to suggest an academic purpose for the universities of Nova Scotia, especially with respect to their central functions of curriculum and research. In coming to their conclusions, the Commissioners have drawn on the public submissions and on informed opinion from sources both within and without Nova Scotia, on campus and off campus, including other commissions investigating the problems of higher education elsewhere in North America. The conclusions may appear controversial: they are meant as constructive criticism to inspire the universities of Nova Scotia to come to grips with the problem of self-definition and to formulate a clear and understandable statement of their educational purpose. Some universities seem to have a clear idea of their purpose: others do not. Yet the definition of an educational purpose is crucial. For without a sense of the purpose of a university, there can be little feeling on campus of community in shared endeavour, nor can the universities communicate a sense of direction that can be appreciated by government and the rest of society. If the universities do not identify, and accept, their purpose in society, no amount of implementation of the Commission's recommendations will lead to academic excellence.

The Entering Student

Across North America there is concern that the secondary school system does not provide its graduates with the fundamental skills and knowledge they must have to succeed either in post-secondary education or in the world of work. That this concern is no less widespread among thoughtful Nova Scotians became clearly apparent to the Royal Commission during the course of its deliberations. Universities spoke of the unevenness of the knowledge indicated by similar marks from different high schools; technological institutes asserted that students could pass through high school without studying the mathematics or science courses they would require for career training; professional bodies pointed out that many graduates of both high school and university lacked the oral and written communications skills that are essential to success in business.

As a result, the Commission concluded that it should determine what are commonly regarded to be the things a young man or woman should know and be able to do upon graduation from high school so as to be well prepared

for post-secondary education or remunerative employment. Secondly, a study of the Nova Scotian secondary school curriculum should be undertaken to investigate whether it currently provides high school graduates with a sound foundation of knowledge on which they can build during their years in post-secondary institutions. Lastly, if the current situation seemed unsatisfactory, the Commission felt that it should recommend means of assuring that high school graduates entering the post-secondary educational system did indeed possess the requisite fundamental skills and knowledge.

(a) Fundamental Academic Abilities

The key to success in almost any walk of life, though perhaps especially in post-secondary education, is an inquiring mind that seeks to know and understand the world as it is. But, as educators know, even students with inquiring minds will fail if they lack certain fundamental academic skills needed to acquire new knowledge and assess its value. First of all, students must be able to **study** on their own, organizing their time and setting priorities so as to learn what is required for various classes and examinations. Study also involves competence in the use of sources of information outside the classroom, such as libraries, computers, interviews and the student's own direct observation. Good **reading skills** are a necessity, for students must be able to identify the ideas, arguments and procedures set out in the many books that remain the fundamental sources of knowledge in most subjects. While reading, students must bring their **ability to reason** to bear, so as to determine the validity of different arguments, to recognize fallacies or to grasp the logic of technical procedures. Ultimately, to report on what they have read, thought or done, students must be able to **write clearly and grammatically**. Here again reasoning skills are needed to identify and formulate problems and to organize their exposition and solution in essay form. Since problems will not infrequently demand formulation and solution in mathematical terms, students should be familiar both with **fundamental mathematical operations** and with the **use of computers**. Inside the classroom, the seldom recognized skills of **listening** and **speaking** are particularly important. Students have to listen critically not only to their instructor, in order to take lecture notes, but also to fellow students, in order to take part constructively in seminar discussions. Speaking skills, which include the ability to organize one's thoughts and speak them clearly, are necessary for answering questions and discussing matters raised.

In short, to an inquiring mind, students must add the ability to read, write, speak, listen, study, reason and perform mathematical and computer operations if they are to take full advantage of their years at university. The application of these skills is, moreover, not restricted to the years spent in education. The Commission was told by management consultants, chartered accountants and barristers that oral and written communications skills (reading, writing, speaking and listening) and analytical skills (reasoning and mathematics) are quite as important in the world of business — and often

TABLE 1
Compulsory and Elective Credits Required for Graduation from Canadian High Schools
September 1984

Province	Eng.	Fr.	Lang. Arts	Soc. Studies	Math.	Sci.	Phys. Ed./ Health	Other	Total Compulsory	Electives	Total Req'd.	Grade Span
B.C.	2	—	—	1	—	—	1	—	4[a]	8[b]	12[c]	10-12
Alta.	—	—	15[d]	10	5[e]	3	2	—	35	65	100[f]	10-12
Sask.	6[g]	—	—	2[h]	1	1	—	1 from math or science in Grade 12	11	10	21	10-12
Man.	3[j]	k	—	2[m]	2[m]	2[m]	1	—	10	10	20	10-12
Ont.[n]												
(Diploma)	5[o]	1	—	3[p]	2	2	1	1 from Fine Arts, 1 from Business or Tech. Studies	16	14	30	9-12[q]
(Certificate)	2	1	—	2	2	1	1	—	9	6	15	9-12
P.Q.	2[r]	2[r]	—	2[s]	—	—	—	—	6	12	18[t]	7-11
(Vocational)	2[r]	2[r]	—	—	—	—	—	Credits from vocational courses	4+	14	18	7-11
(Short Vocational)	2[u]	or 2[u]	—	—	2[v]	—	—	Trade theory & practice	4+	10	14	7-11
N.B.												
(College Preparatory)	3	1	—	2[w]	2	1	1	—	10	5	15	10-12
(General Education & Occupational)	3	—	—	1	2	—	1	—	7	8	15	10-12
(Industrial Education & Home Economics)	3	—	—	1	2	1	1	—	8	7	15	10-12
(Practical)	3	—	—	1	3	—	1	—	8	7	15	10-12
N.S.	3[x]	y	—	1[z]	—	—	—	—	4	12	16[aa]	10-12
P.E.I.	3	—	—	—	2	—	—	—	5	10	15[as]	10-12
Nfld.	7[bb]	—	—	6[cc]	2	2	—	4 'Personal Development'[dd]	21	15	36[ee]	10-12

Source: Nova Scotia Department of Education

TABLE 1 (continued)

a. English must be at Grade 11 and 12 levels; other compulsory courses at Grade 11 level.
b. Includes 5 electives at Grades 11 or 12, and 3 electives at Grade 12.
c. In addition, a course in Consumer Education must be taken in Grade 9, 10, 11 or 12.
d. Including at least 5 credits in Grade 10, and 5 in Grade 12.
e. Minimum. Maximum is 10 credits in Grade 10, 15 in Grade 11 and 12 courses.
f. Must include 10 credits from Grade 12 courses in addition to 5 from a Grade 12 English course.
g. Must be taken in Grade 10, 11 and 12. English courses receive 2 credits, most other courses only 1.
h. Must be taken in Grade 10 and also in Grade 12. Options in Grade 12 are Canadian Studies, History or Economics.
j. Must be taken in Grades 10, 11 and 12.
k. In French-language schools, pupils must take French in Grades 9, 10, 11 and 12.
m. Must be taken in Grades 10 and 11.
n. For students entering Grade 9 in September 1984. Current diploma curriculum requires 27 credits and omits French, one science course, and the compulsory Physical Education, Fine Arts and Business or Technological Studies of the new curriculum.
o. Including two credits at senior (i.e. Grade 12 or 13) level.
p. One from each of History, Geography and Social Sciences (senior).
q. Grade 13 remains to provide Ontario academic (university entrance) courses, valid for credit towards the diploma and open also to mature students.
r. Credits in language of instruction at Secondary V (Grade 11) level. If second language is English, credits at Secondary IV or V level.
s. Canadian History.
t. Four more credits required at Secondary V level.
u. Language of instruction at Secondary III level.
v. At Secondary IV level.
w. History.
x. One credit at each grade level.
y. Students in Acadian schools must take 3 credits in French.
z. Course in Canadian Studies.
aa. No more than 6 credits at Grade 10 level, no fewer than 4 at Grade 12 level.
bb. Three in English; 2 in Heritage Studies/Literature; 2 in Personal Development/Literature.
cc. Two in Newfoundland and Labrador Culture; 2 in World Studies; 1 in Democracy; 1 in Canada Studies.
dd. Chosen from at least two of Religious Education; Physical Education; Fine Arts; Family Studies; or French.
ee. Not more than 16 credits from level-1 (Grade 10) courses, nor less than 9 at level 3 (Grade 12).

TABLE 2
Compulsory and Elective Credits Required for Graduation from Canadian High Schools, September 1984
Expressed as Percentages of Total Credits Required

Province	Eng.	Fr.	Lang. Arts	Soc. Studies	Math.	Sci.	Phys.Ed./ Health	Other	Compulsory	Electives	Grade Span
B.C.	17	—	—	8	—	—	8	—	33	67	10-12
Alta.	—	—	15	10	5	3	2	—	35	65	10-12
Sask.	29	—	—	10	5	5	—	5	52	48	10-12
Man.	15	—	—	10	10	10	5	—	50	50	10-12
Ont.											
(Diploma)	17	3	—	10	7	7	3	7	53	47	9-12
(Certificate)	13	7	—	13	13	7	7	—	60	40	9-12
P.Q.	11	11	—	11	—	—	—	—	33	67	7-11
(Vocational)	11	11	—	—	—	—	—	—	22	78	7-11
(Short Vocational)	14 or	14	—	—	14	—	—	—	28	71	7-11
N.B.											
(College Preparatory)	20	7	—	[illegible]	13	7	7	—	67	33	10-12
(General Education & Occupational)	20	—	—	7	13	—	7	—	47	53	10-12
(Industrial Education & Home Economics)	20	—	—	7	13	7	7	—	53	47	10-12
(Practical)	20	—	—	7	20	—	7	—	53	47	10-12
N.S.	19	—	—	6	—	—	—	—	25	75	10-12
P.E.I.	20	—	—	—	13	—	—	—	33	67	10-12
Nfld.	19	—	—	17	6	6	—	11	58	42	10-12

Note: Percentages may not add up to 100%, due to rounding.
Source: Nova Scotia Department of Education.

sadly lacking even in university graduates. The need for computer literacy is well known, and the study skills (though not always recognized as such) of research and information retrieval are also essential outside the classroom in the preparation of business reports and communications. There is, therefore, widespread agreement on the academic skills expected of high school graduates, and the Commission consequently urges high school administrators and teachers to seek out and implement means of fostering these skills among their students.

(b) Fundamental Knowledge

Besides these abilities, there is a growing consensus among educators both in Canada and the United States that students entering university should possess a knowledge of certain fundamental subjects. These subjects are **English** (or, for francophones, **French**), **mathematics, science, social studies** (that is, history, geography and civics), **the arts** and a **foreign language**. Exposure to all of these subjects at an advanced level in high school ensures that the student will not be denied access to the university programme of his or her choice from lack of prerequisites. More importantly, these subjects form a wide-ranging body of knowledge permitting the student to assess and place in perspective new and often specialized information and theories learned in university. Scientists or mathematicians should be able to appreciate the moral and ethical impact of their work from their social studies, and the intricacies, challenges and different points of view of their own and other cultures from their study of literature in their own and foreign tongues and the arts. Students in the humanities and social sciences should likewise be able to appreciate the creative force and world-changing theories and techniques of science and mathematics. A broad background helps to allay the problem always besetting the specialist, namely, the tendency to view the world only through the eyes of his or her specialty.

A core curriculum for high schools has been recommended in recent years by groups such as the Ontario Secondary Education Review Project (1981) and, in the United States, by the National Commission on Higher Education Issues (1982), the National Commission on Excellence in Education (1983) and the College Board (1983). Ontario has started to implement a core curriculum requiring passes in sixteen compulsory year-long courses out of a total of thirty required for graduation with the Secondary School Diploma from a Grade IX to XII high school programme. Each student must take five courses in English (including two at the most senior level), two in mathematics, two in science, one in history, one in geography, one senior level course in social science, one in the fine arts, one in business or technological studies and one in physical and health education. New Brunswick, Newfoundland and Manitoba have similarly comprehensive core curricula (see Tables 1 and 2), as do California, Florida and at least eleven other American states.[2]

(c) The Entering Student from Nova Scotia

(i) Lack of Core Curriculum

As a result of these curricular changes, students graduating from high school in other jurisdictions will find themselves with a sound foundation of knowledge at the beginning of their university careers. Since a well-prepared matriculating student is more likely to be a truly well-educated graduate, and consequently a successful competitor in his or her chosen field of endeavour, it is a matter of some importance to Nova Scotians to ensure that our own high school students are prepared for university. There is a core curriculum in Nova Scotia, but by 'core' the Department of Education means only the courses each school board is required to provide in its high schools. There are minimum requirements for graduation from Grade XII but, unfortunately, in terms of the core curricula described in the preceding paragraph, they leave much to be desired. To graduate from the three-year senior high school programme, a student must have passed sixteen courses, including three courses in English and one in Canadian Studies. (Acadian students are also expected to have taken three courses in French.) Neither mathematics, nor science, nor broadly-based social studies, nor fine arts, nor another language (except English, in the case of the Acadians) is compulsory. The last grade in which science, social studies, and physical and health education are compulsory is Grade IX. English is also compulsory at that level, but mathematics, though strongly recommended, is not: it is compulsory up to Grade VIII only.

Since there is no core curriculum in the high schools, Nova Scotian universities cannot expect their incoming students to have a solid background in both the arts and sciences. School administrators told Commissioners that the universities should provide more leadership in this regard. Unfortunately, rather than establish entrance requirements that would force high school students aspiring to university study to acquire that range of knowledge, the universities appear to have taken the path of least resistance. The entrance requirements for most Nova Scotian universities bear a striking resemblance to the graduation requirements for high school. On the whole, for admission to the three-year degree programme, the universities require applicants to have passed five courses, including English, in the university preparatory or academic stream at the Grade XII level. The applicant must have obtained at least a 60% average in his or her final marks in these courses, with no mark below 50%. For science, mathematics is also required, as it is for business administration courses, though in the latter Grade XI mathematics is sometimes acceptable.

(ii) Uncertain Standards of Marking

Although high school graduation and university entrance requirements are similar, it may be doubted whether students at Nova Scotian high schools are given an adequate preparation for a successful career at university. The

lack of compulsory mathematics after Grade VIII means that some students will find themselves excluded from the entire fields of science and business administration at university level. Furthermore, variations in marking standards from school to school mean that though students entering university may have satisfactory average marks on paper, they may in reality be below university standard.

The disturbing extent of these variations clearly appears in a study recently undertaken by Dr. C. Field, Assistant Dean of Arts and Science at Dalhousie, of the marking standards in the twelve Nova Scotian and two New Brunswick high schools that send the most graduates to Dalhousie's Faculty of Arts and Science. Nine of the schools are in the Halifax-Dartmouth metropolitan area and three are in other Nova Scotian towns. The numbers concerned are large enough to be statistically significant.

Standards were assessed in English and mathematics only. For each high school the median Grade XII English marks and mathematics marks from 1981-82 were compared with the median English 100 marks and Mathematics 100 marks obtained by the same students at Dalhousie during 1982-83. (Letter grades at university were converted to percentages by the Sinclair Scale.) The larger the drop from high school marks to Dalhousie marks, the lower the standard of the school in the two subjects considered.

As can be seen from Table 3, there was a wide variation in standards. Some schools could accurately assess their students' ability in English or mathematics, but not in both; some assessed both subjects accurately; some neither. In English, the difference between median grades at high school and those at university ranged from 3% to 20%. The difference in mathematics marks was even greater: here the range was from 1% to as much as 32%. Particularly disturbing, given an entrance requirement of a 60% average, is the number of cases where the difference between median marks at high school and university equalled or exceeded 10%. In English, this was true in eight of the fourteen schools; in mathematics, no less than ten of the fourteen. That is to say that in over half of the schools a high school grade of 60% could not be taken to indicate that the student was adequately prepared for university studies at Dalhousie.

The effects of inadequate preparation and uncertain standards must surely be among the principal causes of the high drop-out rate of students who leave university before completing their degree. While the attrition in first year varies from institution to institution, MPHEC estimates that it ranges from a high of 60% to a low of 20%. On average, taking the Maritime system as a whole, and including inter-institutional transfers, 25% to 30% of first-year students do not proceed to second year, 17% to 19% of second-year students do not proceed to third year, and 10% to 15% of third-year students do not proceed to fourth year. That is, of course, for a four-year degree; the figures should be adjusted upwards by 7% to 11% for a three-year degree programme. Overall, only 50% of an entering class will graduate from a Maritime institution. While some students may leave for financial reasons

TABLE 3
Difference in Median English and Mathematics Marks of Students at High School and after Admission to Dalhousie University

	English			Mathematics	
School	Median English 100 Mark	Drop from High School	School	Median Math 100 Mark	Drop from High School
A	72%	3%	L(N.B.)	75%	1%
B	67%	5%	E	70%	5%
C	64%	5%	I(N.B.)	77%	7%
D	67%	7%	B	67%	8%
E	64%	7%	H(town)	77%	10%
F	64%	9%	D	64%	11%
G(town)	67%	11%	J	60%	13%
H(town)	72%	12%	M	67%	15%
I(N.B.)	67%	13%	N(town)	66%	16%
J	60%	13%	K	72%	19%
K	62%	14%	A	67%	21%
L(N.B.)	66%	15%	G(town)	67%	23%
M	64%	17%	F	52%	31%
N(town)	64%	20%	C	52%	32%

School names are represented by letters. High school marks from 1981-82; Dalhousie marks from 1982-83.

Source: Study by Dr. C. Field, Assistant Dean of Arts and Science, Dalhousie University.

and others interrupt their studies to resume them at another place or time, many of those who drop out should probably never have been in university in the first place, either because they lacked sufficient academic skills and knowledge or because they had a mistaken notion of the purpose of a university education and its suitability for themselves. It should not need to be pointed out that a drop-out rate of one in two represents a serious cost to the taxpayer, who is paying for the university to educate students who are unsuitable. Equally, if not more, serious is the toll of disappointment, disorientation and broken dreams on the unsuccessful students and their families.

(d) Revised University Entrance Requirements

Clearly something must be done to ensure that Nova Scotian students have a better chance for success at university than they do now. After considering the evidence from Nova Scotia and other jurisdictions, and taking into account the recommendations of other commissions of enquiry, the present Commission believes that a revision of admission requirements is the most promising way to provide universities with incoming classes of students who not only survive but succeed in an academic environment. The revised requirements should be such as to give a university a greater certainty that its incoming class consists of students who have been exposed in high school to a wide range of essential subjects and whose academic skills have, where possible, been measured consistently. To be specific, the

Commission is convinced that applicants to all universities in Nova Scotia should sit a common test in the academic competencies and that all universities should extend the number of high school subjects required for admission.

(i) Tests of Ability

The Commission does not propose that the province should introduce tests of knowledge for all school leavers. It does propose that a body, preferably established by and representing all the universities in the province, should set tests of ability for all students who wish to proceed to a university education. Such tests of ability are reasonably easy to administer in the fields of reading, writing, reasoning and mathematics. As opposed to knowledge, ability is more a quality of the individual student, and is less dependent on the vagaries of teaching in different schools. The exact nature of the examinations could be determined by the universities acting together, but the Commission holds that a written examination is a better test of ability than a multiple-choice one. Only two tests of ability might be required: a Use of English (or, for francophone institutions, a Use of French) examination would assess an applicant's ability to read, write and reason through a test of reading comprehension and an essay on a controversial topic. A Use of Mathematics examination would similarly assess an applicant's ability to comprehend an argument founded on quantitative data and to employ mathematical operations in the solution of problems.

(ii) Core Subjects for Entry

To guarantee that all entering students have been exposed to a wide range of essential subjects, the introduction of a core curriculum in the high school system would be ideal. Yet even if Nova Scotian high schools do not introduce a core curriculum, Nova Scotian universities may assure themselves of students with a sufficiently broad background of knowledge through more stringent admission requirements. They should require that all applicants have passes not only in English (or, for francophone institutions, French), but also mathematics, science, social science and another language, preferably the other official language, at the Grade XII level. Applicants should also have had liberal exposure to the fine arts during their high school years. In this way the universities could direct aspiring students to these courses without actually imposing a core curriculum on all high school students. It may prove more convenient to require some of the subjects to be taken up to the Grade XI level, leaving some to be taken in Grade XII, but all should be in the university preparatory programme.

The combination of tests of competency and the equivalent of a core curriculum should provide universities with an incoming class of students as well trained to pursue academic studies as any others on the continent. Students who had met the requirements could feel confident that they were well prepared for success in the years ahead. Furthermore, the existence of

common entrance requirements and a common standard of competency in academic skills should facilitate transfers of students within the university system. Since all students would have a common background of knowledge and have records of their performance on commonly administered examinations in competence, one university considering accepting a student from another university would only have to determine whether the two institutions' admission standards were reasonably similar.

For, to safeguard the autonomy and separate character of each university, the Commission believes that each university should be free to determine its own standards with respect to the tests in academic competency, passing marks in the core subjects and other relevant criteria. In the beginning years of competence testing and more extended entrance requirements, some students might be accepted on the understanding that they would have to undertake remedial studies at university. It is to be hoped, however, that even if the standards were fairly low to start with, concern for excellence would lead universities gradually to raise them to the point where almost all entering students could be expected to be fully equipped for academic work. Remedial courses (except in specific cases, such as Dalhousie's Transition Year Programme) would assume a less prominent role in the university curriculum than they do now, thus saving the money now spent on them and freeing teachers for truly academic work.

Common testing and requirements would not, of course, lead to an eradication of the distinct character of each university. The variety of educational experiences available to students at different universities is one of the great strengths of Nova Scotian academic life. Variety would be maintained because full evaluation of applicants would necessarily involve consideration of each applicant's overall high school performance, aptitudes, achievements and extracurricular activities. Thus, then as now, each university would admit only those applicants deemed most likely to benefit from and contribute to that institution's specific educational environment.

(e) Forum on Post-Secondary Affairs

The key to effective functioning of this system is good communications between the secondary and post-secondary education systems. The general standards and courses required for university entry and the particular aptitudes sought by each institution would have to become better known to school administrators, teachers and to high school students themselves.

The Commission believes that a forum should exist where school administrators and teachers could discuss matters of common interest with representatives of the universities. Regular meetings between these groups would have a beneficial effect upon education in the province. Through the exchange of information in these meetings, the school representatives would be able to determine what could be added to or omitted from their university preparatory programmes so that students would acquire the academic abilities and specific knowledge to ensure entry to the university system. But

the topics for discussion need not be limited to those concerning university admissions. The Commission foresees that the regular meetings would also enable teachers in the same discipline at both secondary and post-secondary level to discuss new techniques or interpretations and effective teaching methods in their discipline. There are also possibilities for university/high school joint projects arising from contacts first made at such meetings.

The student intending to go to university must also be kept informed concerning university entrance requirements. For this reason, guidance counsellors or their representatives should also attend the meetings between university and secondary school representatives. The student could then be assured of well-informed counselling in the schools. Even under the present system, when university admission and high school graduation requirements are so similar, some students graduate from high school without knowing that they need mathematics for some university courses and a broad range of knowledge as background for most university courses. Good counselling would be even more necessary if universities established certain core subjects as prerequisites to university entrance.

Guidance Counselling

The need for more career guidance to assist Nova Scotians in selecting the career and post-secondary educational options best suited to their aptitudes and abilities was mentioned in an impressively large number of the presentations to the Royal Commission. No fewer than 11 of 108 briefs made recommendations in the field of guidance counselling, while a further 13 persons and organizations spoke to this subject in the public hearings.

Counselling was perceived to be necessary for pupils in the secondary schools, for people entering the post-secondary and continuing educational systems and for people within these systems. A concern in all three sectors was the need for more widespread diffusion of, and better access to, information about career and educational options. Adequate training for counsellors was recommended, especially in order to enable them to understand the difficulties of women, the disabled and minority groups in our society. Several groups mentioned that particular efforts should be made to encourage women to enter non-traditional occupations in the sciences and technology.

The Commission is disturbed by this evidence that career advice is not readily available to all citizens of the province. With a provincial economy characterized by considerable uncertainty, opportunities for employment are expected to remain restricted for some time to come. Employers will be increasingly selective and demanding in terms of qualifications when they come to fill job openings. Many of the qualifications required can be obtained only by a specific combination of courses in high school followed by courses in a post-secondary institution. Consequently, more than ever before,

counselling will be necessary to direct job seekers of all ages toward the career appropriate to them and the education that is prerequisite to that career.

A general movement to improve counselling services in the ways suggested by the various groups mentioned above is already discernible on the part of the Departments of Education and of Labour and Manpower. In the Department of Education, the Guidance Consultancy has been raised to a full-time position to promote guidance and liaise with, and provide information for, the counsellors in the schools. Departmental guidelines recommend qualifications for counsellors, stress the equal validity of trades and academic options and identify particular needs of specific groups, though career counselling for the disabled is not yet well developed. In the Department of Labour and Manpower, the new Youth Initiatives Programme intends to establish guidance centres where youths between the ages of 15 and 24 but not in school may receive career counselling.

Nonetheless, much remains to be done. School boards are not required to engage guidance counsellors for all high schools, nor are they required to ensure that the counsellors have adequate training in counselling. In terms of the number of counsellors, there are at present (February, 1985) 223 counsellors primarily entrusted with advising some 83,979 pupils enrolled in Grades VII to XII. One hundred and twenty-nine counsellors are full time; 94 are teachers who undertake counselling on a part-time basis. Across the province, there is thus a full-time counsellor-to-pupil ratio of 1:651. The full-time equivalent counsellor-to-pupil ratio may well be nearer 1:500, but it is difficult to establish an exact full-time equivalent figure representing the complement of part-time counsellors. The ratios vary according to each school board, with the lowest ratio in Halifax City, the highest in rural areas. It should be noted that the Canadian Guidance and Counselling Association recommends, and the Ontario Ministry of Education requires, a ratio of one full-time counsellor for every 500 pupils. Mere numbers do not guarantee good counselling, but the Commission has heard that, in this time of financial restraint, some school boards are dispensing with the services of counsellors or sending them back to the classrooms, thus diminishing the opportunities pupils may have to obtain counselling. The Commission therefore urges the Department of Education to indicate that it seeks to provide the equivalent of one full-time counsellor for every 500 students at the high school level. Current statistical evidence suggests that redeployment of existing staff, rather than a large number of new appointments, would enable most school boards to achieve this ratio.

In redeploying teachers or appointing new counsellors, school boards should try to increase the number of female counsellors. At present, of the full-time counsellors, only 43, or 33.3% are women; of the part-time counsellors, 38, or 40.4%. Recent studies suggest that there is little difference in the career advice given to young women by female counsellors and that given by males who have been alerted to the special career problems of

women.[3] An increase in the number of women as counsellors would, however, probably result in a beneficial increase in the number of counsellors who are sympathetic to women's career problems, and should therefore be promoted by the Department of Education.

A serious problem is the absence of any definition of guidance counsellors' duties within the secondary school system. As a consequence, many counsellors find themselves distracted from their primary role of giving vocational advice. Full-time counsellors may be found teaching part-time, supervising study halls and performing clerical tasks, such as scoring standardized achievement test forms. Time that could be spent discussing the pupil's abilities and future with the young man or woman concerned is often spent supervising computer-assisted aptitude evaluation. The Commission therefore urges the Department of Education to specify precisely what a guidance counsellor's duties are, and to ensure that counsellors are properly trained to perform them.

While the Department produces guidelines suggesting the qualifications desirable in a guidance counsellor, it does not require school boards to appoint people who meet the qualifications.[4] There are accordingly some counsellors who have not had any special training in counselling. Of the counsellors who are qualified, most received their training in programmes that no longer exist, such as the Guidance Block of the Nova Scotia Summer School. Since there is no thoroughgoing programme of professional development for counsellors who are already employed, some counsellors may thus not have had their training updated for nearly five years. The sole means of acquiring a training in vocational guidance in Nova Scotia is through the master's degree programme at Acadia. What is needed are a more accessible training programme, such as a diploma in counselling for people who have been appointed as counsellors, and a more rigorous programme of professional development. The Commission urges the Departments of Education and of Labour and Manpower to cooperate in the development and establishment of these programmes.

A counsellor's training should include courses that foster sensitivity to the special difficulties experienced by women, minorities and disabled people in making career decisions. Since these groups have been restricted in their career options in the past, counsellors should be made aware of the particular need to ensure that people in these groups are adequately informed about the full range of career and educational options open to them.

The Commission urges counsellors now in the schools to encourage young women to consider careers in occupations wherein women have not been strongly represented in the past, such as technology and the sciences. That women composed 37.1% of full-time undergraduates in science in 1982-83 compared to only 27.6% in 1970-71 is evidence of a hopeful trend, as are the numbers now enrolled in agriculture, medicine and pharmacy (see Table 4). But much more could be done to encourage women to enter engineering and architecture at both undergraduate and graduate level, and the

TABLE 4
Women as a Percentage of Full-Time and Part-Time Undergraduate Enrolment in Nova Scotian Universities in 1970-71 and 1982-83, by Field

	Full-Time			Part-Time		
Field	**1970-71**	**1982-83**	**Change**	**1970-71**	**1982-83**	**Change**
Arts	50.5	59.4	+ 9.1	61.1	66.9	+ 5.8
Science	27.6	37.1	+ 9.5	28.1	59.7	+31.6
Agriculture	N/A	55.0	N/A	—	—	—
Comm./Bus. Ad.	20.2	43.3	+23.1	23.8	57.0	+33.2
Education	47.5	64.1	+16.6	48.4	67.7	+19.3
Eng./Archit.	1.2	9.6	+ 8.4	0	5.9	+ 5.9
Envir. Studies	N/A	40.7	N/A	N/A	37.5	N/A
Fine/App. Arts	52.9	55.8	+ 2.9	44.4	62.2	+17.8
Dentistry	4.2	21.1	+16.9	—	—	—
Medicine	14.2	36.0	+21.8	—	—	—
Misc. Health	98.6	94.7	- 3.9	0	50.0	+50.0
Nursing	98.4	99.0	+ 0.6	100.0	97.2	- 2.8
Pharmacy	47.1	72.9	+25.8	25.0	40.0	+15.0
House. Sci.	100.0	100.0	No change	100.0	100.0	No change
Law	7.2	38.7	+31.5	0	45.5	+45.5
Rel./Theology	6.5	15.4	+ 8.9	0	36.8	+36.8
Unclassified	7.1	52.1	+45.0	64.0	61.9	- 2.1
Total, All Fields	39.5	48.1	+ 8.6	57.6	61.5	+ 3.9

Source: Calculations based on data from Statistics Canada Catalogues 81-229 (1983) and 81-569.

TABLE 5
Women as a Percentage of Full-Time and Part-Time Graduate Enrolment in Nova Scotian Universities in 1970-71 and 1982-83, by Field

Field	Full-Time			Part-Time		
	1970-71	1982-83	Change	1970-71	1982-83	Change
Ag./Bio.	25.0	29.9	+ 4.9	26.7	60.9	+34.2
Education	35.1	56.7	+21.6	33.9	54.1	+20.2
Eng./Archit.	7.5	11.2	+ 3.7	3.4	9.4	+ 6.0
Fine/App. Arts	N/A	44.4	N/A	—	—	—
Health Profs.	13.2	32.8	+19.6	0	87.5	+87.5
Humanities	45.8	45.4	- .4	40.4	57.7	+17.3
Math./Phys. Sci.	10.7	19.9	+ 9.2	6.3	13.2	+ 6.9
Social Science	27.4	36.1	+ 8.7	20.3	40.3	+20.0
Unclassified	14.8	58.3	+43.5	33.3	36.6	+ 3.3
Total	24.7	35.1	+10.4	26.3	47.3	+21.0

Source: Calculations based on data from Statistics Canada Catalogues 81-229 (1983) and 81-569.

mathematical and physical sciences at the graduate level (Table 5). Without more women in these fields, it cannot be said that Nova Scotia is taking full advantage of the scientific and technological potential of its entire population.

Counsellors are also urged to stress the absolute necessity of acquiring credits in courses prerequisite for entry to many university disciplines. For instance, entry to the sciences and to many business courses presupposes an advanced credit in mathematics. Counsellors should also be able to suggest high school courses that are suitable for a young person who has already decided on taking a specific degree at university, though the young person should be encouraged also to take courses that would permit a change in university programme at a later date. It is hoped that the proposed forum on post-secondary affairs will provide high school guidance counsellors with the information they need to give university candidates the right advice.

At the university level, several groups suggested that guidance be given to students in various professions, both with respect to their studies and to their preparations for practice after graduation. The Commission feels that on campus, as elsewhere, guidance services should be made available where they do not presently exist and should be better publicized where they do exist. Students with problems related to their career studies should be able to feel that they can discuss matters with a sympathetic, and informed, counsellor.

Counselling mature adults concerning further and continuing education is likely to increase in importance as the economy evolves. More and more jobs are expected to be associated in some way with the knowledge and communications industries. Furthermore, the duration of any one job is expected to decrease: people may easily be employed in several different fields in the course of their lifetime. As a result, people will need re-education in different skills and branches of knowledge if they are to cope successfully with the job market of the future.

Before they seek further education, they should be aware of the options and careers available to them. At present, many people do not have this information and do not know where to find it. After considering various alternatives, the Commission believes that the most logical means of providing career information for mature adults would be in conjunction with the Department of Labour and Manpower's Youth Initiatives Programme guidance centres. Each centre should employ at least one counsellor trained in advising mature adults, and the existence of this service should be well publicized. Eventually, these career guidance centres for people of all ages could, by easing the problems associated with job transition, become a key element in ensuring a smoothly functioning economy in Nova Scotia. Evaluation of a similar universal guidance programme operated by Alberta Manpower has indicated the usefulness of such programmes in directing job seekers to the forms of training and employment most suitable for them.

Curriculum

(a) Liberal Education

Once arrived on campus, students should find themselves in a unique institution of post-secondary education. A university is not a vocational school or a business college; unlike these other institutions, its primary aim is not instruction in technique in a specific subject. Traditionally, the aim of the university has been to produce graduates who are well versed in their special discipline but who are also men and women with a broad appreciation of the culture and society in which they live. Thus their education may be truly liberal, that is, befitting a free *(liber)* man or woman, by providing them with the knowledge of the world they require so that they may freely make informed decisions and judgements in areas outside their specialization, instead of slavishly following the dictates of custom or fashion. The university graduate should be a specialist with general interests and broad sympathies.

The foundation of the modern liberal education was the bipartite course in the seven liberal arts studied in the mediaeval university, and the aims of liberal education have not changed appreciably over time. They are, first, to teach students to express themselves clearly, grammatically and logically: hence the trivium consisted of grammar, rhetoric and logic; and second, to introduce students to a wide range of subjects to think about. From the beginning, the subjects in the mediaeval quadrivium, though wide-ranging, were coordinated and interestingly enough would now almost all be classified in the sciences: arithmetic, geometry, astronomy and the theory of music.

A training in clear expression and clear thinking about several interrelated subjects has been found to foster certain intellectual and attitudinal characteristics. A recent study of liberal arts colleges in the United States describes the effects of a liberal arts education in this manner.[5]

> First, liberal arts education increases students' capacity for mature adaptation to the environment, when students encounter new experiences.
>
> Second, [it] increases students' critical thinking and conceptual skills by demanding that they integrate broad ranges of this novel experience.
>
> Third, [it] increases students' independence of thought, instrumentality, and self-definition by setting them free from elaborate restraints on behavior and thought.
>
> Finally, [it] increases students' motivation for leadership by endowing them with a sense of being special.

In short, graduates who have been exposed to the liberal arts should be able to assess a novel situation and be flexible enough to adapt to or control it.

Besides clear expression and clear analytical thought, these are the skills most necessary for adaptation to a rapidly changing world.

(b) Public Concerns

The public hearings clearly indicated that this conclusion is not just the pious wish of academics in the humanities and social sciences, but also the considered opinion of business leaders in this province. Seven submissions called for the reinstitution of the liberal arts core in the university curriculum; several more stated that they found graduates lacking in precisely those qualities traditionally developed in a liberal arts education. The Nova Scotia Bar Society declared that it was their 'view that there is insufficient emphasis placed in undergraduate studies on courses which will develop . . . expression skills.' The Institute of Chartered Accountants found 'an unacceptably high proportion of graduates lack analytical and language skills commensurate with the requirements of a professional degree program.' And the Institute of Management Consultants observed that

> recent graduates of post-secondary education do not possess sufficiently well developed communications skills. In particular we observe lack of continuity, cohesion, clarity and conciseness in their writing efforts.

The Halifax Business Academy reported two recent university graduates who could neither read with comprehension nor write comprehensibly.

The breadth of knowledge exhibited by university graduates was also criticized. A businesswoman noted that, 'to be confident in an office, a board room, any facet of business, one needs to understand the newspaper, contemporary writers, politicians [and] leaders of business' and argued that to do this exposure to a wide range of subjects was necessary. The Bar Society stated that the

> removal of prerequisite course study has resulted in the granting of undergraduate degrees in the Arts and Science faculties to students who may have never taken at college level an English, History, Political Science, Economics, or Mathematics course or courses . . . the absence in undergraduate education of studies in the liberal arts vein, with rare exceptions, will fail to adequately prepare a student for entrance into a legal education program.

In sum, the chief criticisms of Nova Scotian university education by those who have most interest in developing a well-trained workforce to meet the needs of a rapidly changing economy are: first, that undergraduate degrees do not provide an adequate training in clear oral and written expression and in analytical thought and second, that they are overspecialized. Examination of the university course catalogues shows that these criticisms are generally well founded. The inadequate stress on development of powers of written

expression is revealed by a statement in the Dalhousie catalogue regarding first-year B.A. or B.Sc. students:

> One of the five classes chosen must be selected from a list of classes in which written work is considered frequently and in detail. These classes are approved by the Curriculum Committee.

In 1983-84 only seventeen courses in eight departments were so approved. Considering the small number of courses and departments, and the fact that a student need only take one such course out of the fifteen or twenty that constitute a degree programme, the conclusion is inescapable: the university does not stress written work exhibiting powers of precise thought. The Commission is not singling out Dalhousie for particular blame: its catalogue merely states most clearly a problem common to nearly all universities, and one that has been noted unfavourably by business and professional bodies outside the universities.

There is likewise some foundation for complaints that university graduates may suffer from inadequate breadth of knowledge. This problem is most glaringly apparent in most programmes leading to degrees outside Arts and Science. In most universities, the degrees in engineering and in business administration are far too specialized. In engineering, the student is allowed one non-engineering course a year. In most business administration courses, students may take only three or four electives of the total fifteen or twenty required for a degree. Degrees in physical education, home economics, child studies and other occupational subjects are also overspecialized.

Put bluntly, a person who has passed through one of these degree programmes has not experienced a liberal education. He or she is all too likely to be a specialist and little more. It is sad that during the three or four years in which students will have the greatest opportunity in their lives to become acquainted with unfamiliar forms of knowledge and modes of thought, students in occupational and professional programmes find their intellectual horizons severely circumscribed. But the saddest thing of all is that this specialization is to a large degree unnecessary: the students will learn far more specialized knowledge and techniques on the job than they ever will during university. The words of the Bar Society concerning legal education should be read and pondered by those who seek to educate students for other careers:

> It is our view that legal education can be no more than a foundation from which, if a student chooses to practice, he will expand his horizons into the many and diverse speciality offerings. It is not our perception of the role of legal education that the law school produce specialists or technocrats in any particular area of law, for it is we feel rather naive to assume

> that one becomes an expert having taken several courses offered in a particular field of law.

With respect to business education, the Canadian Manufacturers' Association Task Force on Business-Education Relations in Canada observed[6]

> The job of a formal education system is much more to develop people to be trainable than to train them to do highly specific things. Put another way, education should be understanding-based rather than information-based. For their part, employers increasingly recognize that they must develop programmes to teach employees required job skills.

The Commission endorses these views with respect to career education as a whole and recommends that those responsible for career education recognize that students in their disciplines cannot become specialists after a few years in university. It recommends that career programmes should provide a **foundation** for future practice, but should enable the student to acquire a full and rounded, that is, liberal education at the same time. In this way the student will acquire specialist knowledge but also flexibility.

Concerning the liberal arts core, especially in the Arts departments, the criticism the Commission has heard from sources both inside and outside the universities has been not so much concerning the lack of breadth as the lack of structure. Most universities stipulate that Arts or Science students should take a certain number of courses from a core curriculum or in accordance with a distribution requirement. Unfortunately, with the exception of the King's Foundation Year Programme, there is little attempt to relate the subjects so studied in any meaningful way. Both in the core curriculum and the distribution requirement students are given the option to pick and choose, with little guidance. Thus General Arts students may graduate after having studied a very disparate set of subjects. Majors or honours students, on the other hand, may have overspecialized (in the same way as career students) in one particular discipline. In either case, the graduate may not have obtained a clear grasp of the relationships between the principal fields of human knowledge and endeavour. Grasping these relationships is a training in thought, both analytic and synthetic, and should prepare the graduate to learn and master diverse technical details on the job, generate new strategies and cope flexibly with changing employment situations. The low esteem in which the Arts degree is popularly held may reflect that it has of late failed to produce people who can think clearly, as much as it reflects the narrow views of those who believe that technical training is all that is necessary to obtain employment in the Information Age.

In sum, the criticisms the Commission heard of the present state of university education indicated a perception that the balance between the general and specific that was traditional to a liberal education has been lost: the career programmes are too specialized and the arts programmes

frequently too uncoordinated. The Commission feels that these criticisms are valid and that the universities should seriously begin to rethink their curricula, their course requirements and their notion of core subjects in an attempt to provide a clear definition of what the purpose of a university education is On each campus, such an attempt should involve, and solicit the opinions of, as many members of faculty as possible, from as many faculties as possible. It should have as its goals first, a statement of educational purpose that is something more than a collection of platitudes and second, a plan of action that will realize that purpose.

(c) Reasons for a Core Curriculum

Faced with a similar crisis of direction, Harvard University stated that its primary aim was that its graduates should be 'educated people' with certain specific skills and forms of knowledge. The description of the student Harvard desires to graduate is clear and concrete, and therefore worth quoting in full:

> 1. An educated person must be able to think and write clearly and effectively.
>
> 2. An educated person should have a critical appreciation of the ways in which we gain knowledge and understanding of the universe, of society, and of ourselves. Specifically, he or she should have an informed acquaintance with the aesthetic and intellectual experience of literature and the arts; with history as a mode of understanding present problems and the processes of human affairs; with the concepts and analytic techniques of modern social science; with philosophical analysis, especially as it relates to the moral dilemmas of modern men and women; and with the mathematical and experimental methods of the physical and biological sciences.
>
> 3. An educated American [and, since our country is not an almost self-sufficient world power, *a fortiori* an educated Canadian], in the last third of this century, cannot be provincial in the sense of being ignorant of other cultures and other times. It is no longer possible to conduct our lives without reference to the wider world within which we live. A crucial difference between the educated and the uneducated is the extent to which one's life experience is viewed in wider contexts.
>
> 4. An educated person is expected to have some understanding of, and experience in thinking about, moral and ethical problems. It may well be that the most significant quality in educated persons is the informed judgment which enables them to make discriminating moral choices.

> 5. Finally, an educated individual should have achieved depth in some field of knowledge. Cumulative learning is an effective way to develop a student's powers of reasoning and analysis, and for our undergraduates this is the principal role of concentrations [such as majors and honours programmes].

While the current distribution requirements in the curricula of Nova Scotian universities may be intended to develop these abilities, there is a lack of structure in the curriculum and of relationships between the courses that may well hinder students from perceiving the connections between the different disciplines. We live in a continuum of time and space and it is therefore essential that we perceive the relationship between the human and physical events of the past and those of the present. A curriculum stressing these relationships and encouraging students to meditate upon them will enable the students to understand their personal place in time and space, that is, how they as modern men and women relate to the traditions of their culture and to the phenomena of the world around them. Canadian students should, for instance, become familiar with the place of Canada in the tradition of Western culture; they should also learn about the place of Canada among the different polities and cultures in the rest of the world today; and they should learn, through science, the nature of the physical universe that surrounds and includes all human beings. They cannot learn everything in three or four years of college, during which much time may be taken up in the study of a specialty; but they should be exposed to different forms of knowledge — to whet their appetites for more. They must therefore be equipped with the intellectual skills that will enable them to develop their knowledge and understanding for the rest of their lives.

It cannot, unfortunately, be assumed that the entering student is well informed, that is, that he or she has sufficient familiarity with the different fields of learning and the relations between them to make suitable choices of the subjects he or she would like to study during three or four years at university. Left to themselves, very few entering students are able to select courses that, taken together, constitute a course of study whose graduates will have both a deep general knowledge and a knowledge of their special subject. Nor is there sufficient indication that entering students have been generally successful in deciding courses of studies with the advice they receive from high school guidance counsellors or from members of the university faculty, if they receive any advice at all. The deficiencies of guidance counselling in the high schools have already been observed and several submissions at the public hearings suggested that the standard of counselling at university is not appreciably better.

(d) A University Core Curriculum

The solution would seem to be a core curriculum in the liberal arts for all university students wishing an undergraduate or first degree, regardless of

their field of specialization. **A university education should be synonymous with a liberal education.** Clearly, the ultimate responsibility for the core courses offered must rest with the individual university. Nevertheless, the Commission, after taking all arguments into account, strongly suggests that the universities introduce a core curriculum composed of the eight year-long courses listed below or their equivalent (as in the Foundation Year).

In this core or its variations (such as the Foundation Year) it is essential that the relationships between the various subjects be clearly indicated. The role of science and scientific thought in history and society should be clearly apparent in the history and political economy courses, for example; while the historical development of, and the social circumstances contributing to, new theories and processes should not be neglected in the courses in mathematics, science and philosophy. Although no courses are specified in the non-literary arts, the role of the arts should be fully acknowledged in the courses in history and political economy. **An attempt must be made to foster among students a sense of the interrelationship of all knowledge, and students should be encouraged to perceive new relationships between subjects. All courses in the core curriculum should, furthermore, stress the development of the student's written and verbal skills.**

The eight courses are in the following disciplines:

English/French: In the first and second years students should acquire a thorough grounding in the grammar, rhetoric and literature of whichever of the two official languages is their mother tongue. Thus in their first year they should study

> **Elements of language, grammar, composition, criticism and literary forms**

In the second year they should study

> **English or French literature from the beginnings to the present**

The study of English or French enables students to express themselves clearly in the language they will be using for the rest of their lives. Language is a tool for the communication of thought: its precise use will be ever more necessary in an age that stresses communications technology and increased information flow.

Modern Language: Canadians cannot afford to be parochial. In Canada, knowledge of both official languages enables Canadians to feel at home in both French and English cultures and to work and do business easily in all provinces. Abroad, Canadians must begin to learn other languages in order to compete effectively in the world market: the citizens of the successful exporting nations of Europe and Asia did not achieve their dominance of world markets by taking a chauvinistic pride in being monoglot and ignorant of all cultures other than their own, failings Canadians are all too prone to fall into.

The modern language should be taught in such a way that students rapidly achieve fluency both in speaking and reading; unlike most courses, here is a subject where too much stress on written work may be counter-productive.

Philosophy: Provided with the linguistic tools they require for clear expression of thought, first-year students should be given practice in thinking. They should therefore take a course in the

History of philosophy, with particular emphasis on philosophical, moral, ethical and aesthetic problems, and the synoptic review of selected philosophical systems.

Mathematics: Mathematics is both a language and an introduction to logical thought: it is the foundation for advanced work in the sciences, but is also required for quantitative work in other fields, especially business. All students should therefore take a course in

Mathematics, with particular stress on algebra, calculus, statistics and possibly an introduction to the use of computers.

Having acquired the fundamental linguistic and logical skills, students would then be in a position to think to some purpose about the human and physical world around them, both as it is now and how it has developed. The courses that provide such subjects for thought are

History: Western civilization, including Western interactions with the other major civilizations.

Political Economy: An introduction to economic, social and political structures of today.

Science: Chemistry, Physics, Geology *or* Biology.

The Commission feels so strongly that this common core is the heart of a university education that it believes that programmes which do not require it should not be in the degree category. Persons seeking purely technical qualifications in any university programme, whether academic or occupational, should not be awarded a baccalaureate or higher degree unless they have completed the core curriculum or its equivalent. They should be awarded diplomas and advanced certificates. Awarding such persons university degrees damages both university and occupational education. On the one hand, it needlessly confuses the definition of what a university education is. On the other hand, it debases the dignity of post-secondary occupational education by implying that non-university qualifications in purely occupational courses of study are inferior. In occupational education the stress should be on the quality of education, not on any presumed prestige derived from a university degree.

The Commission recognizes that in certain subjects, national accrediting

bodies require departments to teach, and students to study, a specific number of courses in the subject or else the degree programme loses its accreditation. The Commission believes, however, that departments in these subjects should ensure that the course time above the minimum required by the accrediting body should be occupied by courses in the core curriculum and not, as now happens, by more courses of specialist study.

Perception of the relationships, the connections between things is the root of understanding; and the acquisition of understanding is what gives zest to learning. As A. N. Whitehead observed in *The Aims of Education*,

> The justification for a university is that it preserves the connection between knowledge and the zest of life, by uniting the young and the old in the imaginative consideration of learning. The university imparts information, but it imparts it imaginatively. . . . A fact is no longer a bare fact: it is invested with all its possibilities.

Through imaginative indication of the possibilities of the subjects taught, the apparently staid and traditional subjects of the proposed core curriculum can be made as intellectually exciting to learn as the most novel specialized half-course taught in the universities today. However, as Whitehead warned, 'imagination . . . can only be communicated by a faculty whose members themselves wear their learning with imagination.' Thus, those faculty concerned with teaching the core curriculum must be prepared to assimilate ideas from disciplines other than their own and to consult and work closely with members of other departments so as to develop courses that make clear the relations between different forms of knowledge. It is to be hoped that the resulting exchange of ideas and approaches will contribute to the breaking down of intellectual compartmentalization and to the creation of a sense of academic community on campus.

Faculty

During the hearings and after, the Commission was made aware of five major areas of concern relating to the performance of university faculty. There is concern that high standards of teaching be maintained; that faculty undertake research; that sabbatical leave not be abused; that tenure not protect incompetence or impede flexibility in academic planning and, lastly, that more academic positions be found for younger scholars and women. The issues are interrelated — the use of sabbaticals is closely related to research, for instance, and the availability of academic employment to tenure — but are most easily considered if treated separately.

The criticisms voiced in the hearings and after did not, of course, extend to the faculty as a whole, nor to all departments in all universities. The Commission is well aware, for instance, that many professors are fine

lecturers who make significant contributions to research. Obviously, little if any fault could be found in their performance. Unfortunately, few procedures appear to exist to ensure that all professors maintain these high standards. The Commission's recommendations, therefore, reflect the public concern that clearly defined procedures be introduced to ensure that all faculty perform to the high standards that Nova Scotians have come to expect of their university professors.

(a) Instructional Quality

Teaching students is the essential mission of the faculty. Indeed, some people have thought that the faculty should not do anything else: Cardinal Newman, for instance, declared that the purpose of a university was 'the diffusion and extension of knowledge rather than the advancement.' More recently, however, a consensus has developed that the purpose of a university also includes, as the Graham Commission observed, the preservation of knowledge and its advancement through research. Faculty are consequently hired after consideration of their teaching ability, their grasp of knowledge and their research.

Unfortunately, as one current member of faculty stated, 'in our universities research gets priority over teaching.' Nor is the problem unique to Nova Scotia: more weight tends to be given to research ability than to teaching ability in universities throughout North America. There are two reasons for this: the nature of the hiring and promotion process for faculty, and the lack of formal training in teaching on the part of most professors. With the increased emphasis on the doctorate as the primary qualification for academic employment, there has been an increased emphasis on research ability, at the expense of teaching ability. Promotion has, furthermore, been linked ever more closely to published research, again at the expense of teaching. As a result, professors are encouraged to pay too little attention to mastering the skills required to teach effectively.

Professors have usually received little training in how to teach before beginning their first series of lectures. While they were in graduate school, they may have been teaching assistants but, again, probably received little instruction in teaching. As the Association of American Colleges tartly observed in its report, *Integrity in the College Curriculum* (1985),

> The teaching assistantship is now a device for exploiting graduate students in order to relieve senior faculty from teaching undergraduates . . . In fact, as an initiation rite, the teaching assistantship is almost invariably a disaster: it says to the initiate that teaching is so unimportant that we are willing to let you do it.

Clearly, if universities are to demonstrate a sense of responsibility to their students, they must re-emphasize the role of teaching. The first step is to ensure that all faculty are familiar with at least the rudiments of the art

of teaching. The Commission believes that the standard of teaching in Nova Scotian universities can be raised in various ways.

First of all, all doctoral students should be given a thorough grounding in the theory and practice of teaching. To quote the Association of American Colleges again,

> The qualifying process should include acquaintance with the literature on human learning and evaluation as well as apprentice teaching, subject to peer observation and the criticism of veteran teachers. The candidate should demonstrate competence in designing a syllabus and examinations, and selecting textbooks, readings, and laboratory materials. Not only must the candidate learn how to read tests critically but fairly [but he or she must also learn] how to know the difference between a good paper subject and one that is either too grandiose or simply not worth doing . . . The candidate should also receive instruction in how best to help students to speak and write clearly.

Thus the doctoral degree will certify that its holder is not only competent in research, but competent as a teacher. As more of these new doctors are hired by universities, the standard of teaching should gradually improve.

In the interim, however, the current professors should make every effort to improve their teaching methods. Certain professors should be given a specific training in teaching methods in their fields, and subsequently serve as teaching advisers for other members of faculty. One of their duties could be to conduct short courses in effective teaching methods for other professors now teaching in the universities. Attendance at one of these courses would be made a qualification required for tenure and continued appointment to tenure. For tenured faculty, attendance at one of these courses, or perhaps at a short refresher course, could be required for favourable review in the tenure reviews proposed below.

Any effort to improve teaching would be pointless without some means of evaluating its success. Many professors are reluctant to submit to evaluation of their teaching skills by their students, probably on the grounds that such evaluations may simply reflect a professor's popularity, rather than his or her teaching ability. It is possible, however, to construct a questionnaire that enables a fair assessment of a professor's effectiveness in conveying the subject matter of the course and in stimulating thought. Such questionnaires should, of course, be limited to questions students could be expected to answer. Carefully constructed questionnaires of this type may be usefully employed in evaluating professors' teaching on an annual basis, though for tenure-review purposes more complete evaluation, described below, should be employed.

A final means of raising the standard of teaching in universities would be to enable good teachers who enjoyed teaching to specialize in teaching.

Objections to this proposal usually take the form of statements to the effect that all professors must undertake research and that research aids teaching. Much depends, however, on the definition of research, and that matter will be considered in the following section.

(b) Research Ability

In their responses to the Royal Commission, the universities were unanimous in their belief in the importance of research, and in the importance of research ability on the part of the professors, but made little attempt to define precisely what they meant by research. Upon close inspection, the number of activities classified as research is exceedingly great. In his *Higher Education for the Future*, Charles Carter identified at least ten forms of activity that are all, in different departments and institutions, described as research.[7]

1. **Scholarship** is the possession of an extensive and profound knowledge of a subject, to be obtained by studying its literature or by discussion with other scholars.

2. **Theory construction** is the activity of developing a logical structure by applying operations to defined entities, the system being constrained by prior assumptions.

3. **Observing and chronicling** is the recording of natural phenomena, human reactions, historical events and the like, in a manner which so far as possible preserves the record uninfluenced by the presence of the observer. We can include here also the detective operation, familiar to historians, of deducing from imperfect and partial primary records a more comprehensive and satisfactory secondary record.

4. **Experiment** is the recording of phenomena in a situation which has been created and planned by the observer.

5. **Theory testing** is the confrontation of theoretical hypothesis with the results of observation or of experiment, in order to decide whether a theory provides an adequate explanation, and can thus be selected as a basis for further development or for prediction.

6. **Design** is the use of known principles to derive a specification for a new creation.

7. **Development** is the process of taking a result established in small-scale experiment, or embodied in a preliminary design, through the stages which lead to an actual application.

8. **Criticising and elucidating** is a common activity in the literary subjects, and an occasional one elsewhere. It is a hybrid, in part an extension of scholarship and observation, and in part an exercise in artistic judgement.

9. **Artistic creation** is not properly 'research', but is likely to be substituted for it as a use of the time of some of those who teach art, music and drama, and of some 'creative writers' in the literary subjects.

10. **Consulting and advising** may involve new theory, observation, experiment and testing, but may simply be an application of methods and principles already known to a particular need.

Considering the range of activities covered, the word 'research' seems to be an oversimplification. Yet some form of simplification seems to be necessary, lest description of what professors actually do become cumbersome. Given that research is undertaken in both the sciences and the arts, any terms of classification should be sufficiently broad to cover both forms of scholarly activity, and yet sufficiently differentiated to suggest the range and diversity of activity carried out on campus. For the purposes of this report, what is currently described simply as research will be reclassified as:

1. **Scholarship.** This is the fundamental form of research required of professors. It consists of keeping up to date in one's subject through reading and discussions with other scholars. Scholarship requires a professor to assimilate and compare diverse theories and hypotheses and to think out his or her own intellectual position. Its purpose is to enable professors to write and deliver good lectures.

2. **Basic research,** in Hans Selye's words, is 'the study of natural laws for their own sake, irrespective of immediate practical applicability', though to 'natural laws' should be added 'human phenomena'. In Carter's terminology, it includes theory construction, some observing and chronicling, some experiment, some criticism and elucidation, and artistic creation. Its purpose is the publication, in some form, of results.

3. **Development.** 'Only the kind of research usually designated as "basic" is true *discovery*. What follows is *development*. The former kind is basic, or fundamental, precisely because every other kind of research develops from it.'[8] Most research undertaken in universities is development. More specifically, in Carter's terminology, it includes development, design, some experiment (especially repetitive testing), some observing and chronicling, theory testing and most consulting and advising. Development assesses the implications and practical applications of known theories, and has as its end publication of results and their practical application.

Research, whether as defined above or by Carter, is clearly a many-faceted activity. The often stated requirement that all professors engage in 'research' because it aids teaching therefore becomes somewhat abstruse. Research in this case usually means basic research and development, but it is by no means clear that these forms of research are those of greatest value in preparing a series of lectures. Of the three activities, scholarship, basic

research, and development, scholarship is the most directly related to the essential mission of the faculty, that is, teaching. Scholarship determines the structure and content of all but the most specialized, usually graduate-level, courses. Basic research and development are not so closely related to the teaching function, though occasional reports of their findings may give added interest to a lecture course taught by a professor engaged in them.

It would accordingly make more sense if all teaching professors were required to engage in scholarship. Good scholarship is as intellectually demanding as the other forms of research, especially if a conscientious effort is made to keep up with the proliferation of books and articles on any subject and to establish an individual point of view with respect to conflicting hypotheses and explanations. Writing and regularly revising lectures takes time and, combined with counselling and advising students, can be a full-time job.

Not all professors, however, wish to dedicate so much time to teaching and scholarship, for basic research and development make equally great demands on time. One group of university physicists stated that

> [Because of] the lack of undergraduate laboratory staff [such as teaching assistants and technicians], the faculty has to spend more and more time on undergraduate teaching. This takes away time from teaching at the graduate level and research. A reduction in research activity leads to a reduction in research funding, since grants for such are directly tied to the level of research activity of the researcher.

Thus, in some departments, teaching and research (defined as basic research and development only) are regarded as antithetical. This is not so in all disciplines, but evidently the confusion of research which all professors must do with basic research and development has resulted in the employment of professors who conceive their central mission to be other than undergraduate teaching.

Few people inside or outside the university would be likely to object to permitting outstanding practitioners of basic research and development to spend more time in their form of research than in teaching. From their work flow benefits to scholars, to industry and to other public groups. There has been greater reluctance inside the university, at least, to permit good teachers and scholars to dedicate most of their time to teaching, even though these professors are essential for the education of students. One reason for this discrimination is that the evaluation of teaching and scholarship is not as bureaucratically convenient as the evaluation of basic research and development, which yield publications and copyright dollars that can be easily counted.

The Commission feels that universities will be doing a disservice to their students and the community if they continue to permit basic research and development to be emphasized at the expense of teaching and scholarship.

University departments should be able to embrace and appreciate persons with a diversity of abilities and skills, ranging from pure teachers to pure basic researchers, though it is expected that the extreme types will be rare and that most professors will combine skills in teaching and scholarship with those in some other form of research. Teaching is linked with scholarship, for a teacher who was not a scholar would be a poor teacher. On the other hand, a good basic researcher does not necessarily possess any teaching skills. The Commission accordingly believes that the absolute specialists in basic research and development must be less numerous than those who combine teaching with scholarship and the other forms of research if the university is to fulfil its essential mission of teaching students. In order to appreciate and take advantage of scholarly diversity, teaching and scholarship must be given equal value to basic research and development on occasions when professors are assessed for tenure or promotion, as considered below under tenure.

(c) Sabbatical Leave

The problem related to sabbatical leave seems to be largely one of communication. Universities do not seem to have been able to make non-academics understand what a sabbatical is. Many members of the public do not know that it is leave in which professors are intended to engage in full-time research, whether scholarship, basic research or development. Since sabbatical research may be undertaken in the professor's own home or in a foreign country, it is all too frequently viewed as merely a holiday by the surprisingly large number of people who believe that any activity not performed on a normal working schedule in an office at one's place of employment is not proper work.

To be sure, it is possible there are some professors who abuse sabbaticals and do not undertake research. The evidence is mainly anecdotal, but it is persistent. The Commission believes that universities would do much to improve the public perception of sabbatical leave and eliminate possible abuse if they required evidence of research planned for, and undertaken during, a sabbatical. Professors should provide statements of research planned before they could be granted a sabbatical leave, and after the leave was over they should provide reports on the research actually undertaken. The final report of professors who emphasized teaching and scholarship should include a statement, preferably a bibliographic essay, of books read during the sabbatical and an indication of other activities undertaken to improve teaching skills. The report of professors who emphasized basic research and development should indicate the results of these types of research.

(d) Tenure

(i) Purpose

Tenure, originally introduced to protect academic freedom, is now frequently regarded as simply an unlimited form of job security. As such, it

is believed by some members of the public to shield incompetents and to impede flexibility in academic planning. It therefore seems necessary to consider what tenure is and the degree to which the charges against it are justified.

The Canadian Association of University Teachers (CAUT) defines tenure as 'an appointment without term, which may be terminated only through resignation, retirement or dismissal for good reasons as established by a proper hearing.' It is usually conferred by the university on teachers after a probationary period of up to five years. At the end of this time a Tenure Committee elected by the teacher's department reviews his or her teaching skills, publishing record and contributions to university administration and decides whether to recommend that the teacher be granted tenure. Appeals procedures exist to review an unfavourable recommendation. Outside assessment of the teacher's work may be requested. Senior professors who transfer from one university to another are generally granted tenure upon being hired.

The objective of tenure is 'to protect free criticism and independent judgment in the interest of the university community and of society at large.' The justification for tenure has been stated by Professor Fritz Machlup:[9]

> With regard to some occupations, it is eminently in the interests of society that men concerned speak their minds without fear of retribution . . . . The occupational work of the vast majority of people is largely independent of their thought and speech. The professor's work *consists* of his thought and speech. If he loses his position for what he writes or says, he will, as a rule, have to leave his profession, and he may no longer be able effectively to question and challenge accepted doctrines. And if *some* professors lose their positions for what they write or say, the effect on many other professors will be such that their usefulness to their students and to society will be gravely reduced.

In short, tenure assumes the fundamental democratic belief that for a society to adapt to change, it requires informed critics who are free to speak their minds.

Freedom of speech in the universities has not, however, always been agreeable to powerful interests in the community and even on academic boards of governors. More recently, there have been increased demands from some governments, notably in the United Kingdom and in some American states, that universities (and consequently professors) teach only what is 'relevant to society'. Relevance to society is of course a fundamental purpose of education, but some doubt must exist whether the governments in question do not confuse relevance to society with relevance to what the government happens to be interested in. Thus there must be some doubt whether they are prepared to allow universities as professional educators to decide (after full consultation with informed outside or intermediary bodies),

what subjects are truly necessary for citizens to know. Lastly, an ever present threat to the free expression of informed opinion by professors has been posed by certain student or faculty groups who have sought to impose a rigid academic orthodoxy upon their university departments. Partisans of specific theories and political points of view have not infrequently attempted to block the employment of professors who did not agree with them. Thus, without tenure, fully competent professors who expressed views inimical to those of governing bodies, governments or partisan opinion might well be faced with dismissal.

(ii) Tenure in Practice

The Commission recognizes the need for tenure to protect professors' right to free speech, but it feels that the operation of the tenure system in recent years has not been altogether satisfactory. There has been a tendency, certainly on the part of some sectors of the public, and possibly also among administrators and professors, to confuse academic tenure with ironclad job security. This view has developed due to the apparent lack of flexibility in the tenure system with respect to two problems: first, the dismissal of professors who are academically incompetent; second, the need to reallocate or reduce faculty, particularly in times of economic stringency. The second of these problems will be considered in the chapter on coordination (p. 157). The first of these problems, being more directly associated with the quality of academic instruction and research will be considered here.

An abiding priority is the academic excellence of the faculty, and that priority requires that incompetent faculty be dismissed. No one disputes that tenure should not shield incompetents, and the CAUT has provided guidelines to govern procedures in dismissals for this cause.[10] Nonetheless, the effectiveness of the dismissal procedures is doubtful. The Nova Scotia Confederation of University Faculty Associations (NSCUFA) estimates that between 1981 and 1984 dismissal procedures were initiated against only 5 (or 0.27%) of the 1,855 faculty in this province. And in Canada as a whole, over the last fifteen years, only 25 professors in all of Canada have suffered loss of tenure as a consequence of dismissal procedures for *any* reason, though CAUT estimates that another 75 may have resigned before proceedings were initiated against them.[11] It may justly be suspected that among the 20,000 to 30,000 Canadian university teachers during that period there have been more than 100 incompetents (0.33% of the total), men and women who have not kept up to date in background reading, who cannot teach, who have not published.

In voicing this suspicion, the Commission is well aware of the dangers of contrasting a myth of universal competence in all other fields of human endeavour — business, government, the professions — with actual practice in the universities. Interest groups who wish to diminish academic freedom frequently attack tenure on the grounds that it shields incompetence, and state that all incompetents are fired in their own particular occupations. This

is simply not true.[12] All human occupations have an acceptable level of competence, determined by those people engaged in that occupation, and people of varying degrees of competence fill the ranks of all organizations. Since universities, however, play a normative role in society, their levels of competence should be closer to the ideal than to the average. To require academic excellence of students but not of professors savours of hypocrisy, and steps must be taken to ensure that educators not only preach excellence, but strive for it.

The Commission is also well aware that the question of competence is particularly acute in an institution whose function is to educate succeeding generations of students. There will always be younger scholars who feel they have a better grasp of their subject than the professors who taught them the fundamentals. Nonetheless, the complaints of younger scholars cannot be disregarded in the same way as those of other interest groups, since the younger scholars are thoroughly familiar with the faculty of the university which granted them their degrees.

Recent doctoral graduates are experiencing severe difficulties in obtaining university employment. Job openings in Nova Scotian universities are particularly scarce, and some 1,109, or 59.8% of the 1,855 faculty have tenure (see Tables 6 and 7). It will be noted that the percentage of faculty who are tenured is well above 59.8% in certain institutions. Given such a restricted job market, the Commission believes that some means of evaluation should be introduced to establish that faculty members continue to be of the high quality that merited the conferral of tenure upon them.

(iii) Review of Tenure

As younger scholars well know, and as CAUT admits,[13] qualifications required for tenure now are usually far more demanding than they were during the period of university expansion, 1960 to 1975. Thus, faculty who received tenure in the very recent past are unlikely to be incompetent. The real problem lies in the long-term tenured faculty. It may well be that the vast majority of these professors are entirely competent: but there is no commonly acknowledged means of determining whether this is so. The defence offered by faculty representatives that faculty are evaluated every year by their students and indeed every time they submit an article for publication, request a grant or seek promotion is inadequate, since unfavourable outcomes of these evaluations are unlikely to lead to reprimand or dismissal for incompetence. There has been a tendency to delegate the responsibility for maintaining academic standards to the university administration while failing to provide the administration with a regular flow of information relating to academic competence that might enable administrators to take action to maintain those standards. Disciplinary or dismissal proceedings therefore occur haphazardly, when administrators manage to obtain evidence that a certain professor is not performing to standard. The lack of determined efforts on the part of Nova Scotian

TABLE 6
Tenured Faculty, by Rank, at Nova Scotian Universities
1983-84

Rank	No. in Rank	No. Tenured	% Tenured
Professor	449	365	81.3%
Associate Professor	779	600	77.0%
Assistant Professor	474	132	27.8%
Others	153	12	7.8%
Total	1,855	1,109	59.8%

Source: Statistics Canada, UCASS

TABLE 7
Tenured Faculty, by University, Nova Scotia
1983-84

Institution	No. of Faculty	No. Tenured	% Tenured
Acadia	228	156	68.4%
AST	6	1	16.7%
Dalhousie	872	467	53.6%
MSVU	124	64	51.6%
NSAC	53	49	92.5%
NSCAD	47	—	—
St.F.X.	155	117	75.5%
SMU	173	137	79.2%
TUNS	94	61	64.9%
UCCB	64	50	78.1%
UKC	11	7	63.6%
U.Ste.-A.	28	—	—
Total	1,855	1,109	59.8%

Source: Statistics Canada, UCASS

university administrations to establish regular methods of assessing academic competence is an indictment of their administrative competence.

The Commission believes that to dispel the suspicion that tenure offers job security for incompetents, universities must institute periodic reviews of academic performance. Collective agreements between Nova Scotian faculty unions and university administrations all affirm that incompetence is cause for dismissal of tenure, but none of the agreements establishes mechanisms whereby the competence of faculty may be fully and fairly assessed. By contrast, reviews that protect academic freedom have been functioning successfully, with the agreement of the faculty association, at the University of Ottawa since 1976. The Commission recommends that similar reviews be introduced in Nova Scotian universities.

Continuous assessment should be undertaken on the basis of **annual reviews**, with more complete reviews being undertaken at five-year intervals. At the beginning of every winter term, each professor should submit a report of his or her professional activities over the course of the previous year to the dean of his or her faculty. The format of the report

could be standardized, but should include a statement of courses taught, course outlines and reading lists, a bibliographical essay on books related to the professor's discipline that he or she has read during the year, reports of basic research and development undertaken and a list of publications, papers delivered and meetings and courses attended. The professor should also provide an outline of scholarly activity that he or she proposes to undertake during the following year. (It will be seen that the material requested for the annual review would be similar to that required prior to and following a sabbatical leave.) The dean should also review student evaluations of the professor's teaching during the year. To be effective, these evaluations of teaching performance should require students to answer specific questions. Before making a final assessment, the dean should refer the professor's report and prospectus and the student evaluations to the head of the professor's department and to members of the departmental teaching personnel committee for their comments. The dean should then notify the professor that his or her work was satisfactory or else begin proceedings leading to a formal warning or disciplinary measures.

At the University of Ottawa, a more complete review is undertaken for purposes of contract renewal, conferral of tenure and promotion, and also after a professor has been formally warned to improve his or her teaching or research. The Commission feels that these formal reviews should occur not only at these junctures in the professor's academic career but at five-year intervals after tenure. The **quinquennial review** should be a time for the academic to take stock of his or her directions in teaching and research and of his or her standing in the scholarly community. At this time the dean should reassess the annual reviews of the previous years. A committee, including members of the professor's discipline from other universities, should assess the professor's contributions to research (research as defined above on p. 75). The committee should read the bibliographic essays provided by teaching professors, articles and books (or full descriptions of these) provided by basic research and development professors, and then meet to discuss research matters with the professor concerned before rendering a report to the dean. It would be advisable to include in this committee members of the professor's discipline from universities not only outside Canada but also outside the North American continent, in order to obtain a true assessment of the professor's research by world standards. These foreign committee members would not usually be able to meet with the professor, but could render written assessments of his or her research work to the dean.

The quinquennial review must also assess teaching ability. The committee mentioned above could attend one of the professor's lectures, though the full evaluation must also take into account the students' evaluations of the professors, and perhaps also evaluations of the professor from past students. The committee should consider the professor's contributions to administration and the general quality of campus life. This report on teaching and other

activities should also be rendered to the dean.

The dean should then discuss the report with the head of the professor's department and the departmental teaching personnel committee before informing the professor of the review's findings. If the review considered the professor's work to be unsatisfactory, a formal warning could be issued or disciplinary proceedings started.

At the University of Ottawa the disciplinary measures taken following an unfavourable annual or formal review include withholding of half or all salary increases due to a professor as progress-through-the-ranks payments and, as the last resort, dismissal. Withholdings of progress-through-the-ranks payments occur if the professor has not improved his or her performance within the period agreed (not less than twelve months or more than thirty-six months) for improvement after a formal warning. Dismissal proceedings are initiated if the progress-through-the-ranks payments have been withheld in their entirety in two of the previous academic years.

The Commission recognizes that the standards expected of professors may vary from university to university and furthermore from department to department. Some universities may set highest priority on basic research and development ability, others on teaching. Still others may prefer, as a result of the reviews, to suggest a heavier teaching load to professors who have proven teaching skills but are weak at research, thus giving more time to the researchers in the departments concerned. The review should be considered to be an evaluation of competence, and not a tenure review. Hence the importance of faculty from outside the university on the review committee, and the advisability of a period following evaluation for a faculty member to improve his or her performance, if necessary.

Should continuous assessment by means of reviews prove to be unsatisfactory, faculty from other universities could be involved in evaluation in another way. External examinations would be introduced for students throughout the Nova Scotian university system. The results of these examinations, which would be read and graded by academics from universities other than the students' own, would permit effective assessment of the faculty who had been responsible for the students' instruction.

The Commission's hope and intention is that introduction of a review system will help allay the misgivings of some concerning the tenure system. The annual and quinquennial reviews will certainly determine whether professors are competent in their specialized areas of teaching and research. They will not, unfortunately, determine whether the professors are broadly educated men and women. A senior administrator of one Nova Scotian university observed to the Commission that there are many well certificated but not well educated people teaching in our universities. Students entering university at the age of eighteen do not have sufficient background to make an informed choice of their university programme or to assess the effects of this choice upon their ultimate career prospects. The administrator pointed out that the narrowly educated professors who increasingly dominate the

faculties of our universities are incompetent to give the mature and wise advice the students need.

There seems no easy solution to this problem. The introduction of a core curriculum or a foundation programme may encourage professors now in the universities to expand their interests within their own disciplines and to take an interest in the relationship of their own discipline with others. Discussions among all the faculty associated with the core curriculum could be a liberal education for many specialists. In future, the Commission hopes that faculty will be recruited from graduates who have studied the core curriculum while undergraduates and will therefore be people of broader sympathies and understanding, better able to advise students. However, as the next section reveals, one of the most distressing features of the current tenure system is its constricting effect on the influx of new faculty.

(e) Recruitment

The exchange of ideas is central to the intellectual life of the university. New ideas and new perspectives on accepted ideas have a vivifying effect on scholarly discussions, suggesting new concerns and directions in teaching and research. Traditionally, new ideas and perspectives have come to university departments with new personnel: visiting professors, professors on sabbatical and, especially, new members of faculty. The recruitment of women and members of minority groups, bringing different perspectives on the world, has encouraged a new approach to many disciplines in recent years. These new faculty were part of the great expansion in faculty numbers during the 1960s and early 1970s, a period that saw a concomitant expansion in the range of intellectual interests on campus.

Since that time there has been a marked decline in the numbers of new faculty recruited; and it seems more than probable that new openings for junior faculty will diminish even further between now and the end of the century. There are a number of reasons why this should be so. Women, for instance, may have suffered from social attitudes that discourage them from adopting an academic career. But those women who do seek an academic career will find that a combination of shortage of funds, the age structure of tenured faculty and a decline in student numbers denies many of them, no less than many other new doctoral graduates, the chance of university employment.

(i) Recruitment of Women

During the hearings the Commission's attention was drawn to the small numbers of women who are faculty members in Nova Scotian universities. In the academic year 1983-84 there were only 380 women professors and other teaching staff out of the total 1,855 faculty; in other words, some 20.5% of the faculty were women. This figure is an improvement over 1970-71, when there were only 182 women, or 15.4% of a faculty of 1,184, but it is still low. Recruitment of women has not equalled recruitment of men.

Between 1970-71 and 1983-84, 631 women joined the faculty, as compared to 1,763 men. (See Table 8.) As can be seen, 2.8 men were hired during this period for every woman.

The root of the problem, however, does not seem to lie, except perhaps in some departments, in an unshakable prejudice against employing women, but rather in the small number of women who hold the minimum qualification for employment as faculty. The minimum qualification for nearly all professorial appointments advertised since 1970 has been the doctorate. Between 1969 and 1982, 487 persons received the doctorate from Nova Scotian universities. Of these only 70 (14.4%) were women, as opposed to 417 men. (In Canada as a whole during the same period, 22,674 people received the doctorate, of whom 3,768, or 16.6%, were women.) (See Table 9.) Given that women represented 26.4% of the hirings in Nova Scotian universities between 1970 and 1983 but only 14.4% of the doctors, there would seem to be little evidence of overt discrimination against employing women as faculty, at least since 1970. As shown in Table 8, since 1974 women have consistently formed a higher percentage of new appointees in Nova Scotia than in the rest of Canada.

Clearly the first step to be taken towards increasing the number of women on faculty is to increase the number of women who obtain the doctoral degree. It has been suggested to the Commission that more women would enrol in the doctoral programme if there were greater flexibility in residency requirements (that is, the number of terms that must be spent taking courses or studying on campus), course transfers and delivery of courses at times and locations more accessible to the learner. While agreeing that universities could investigate what could be done in this regard, especially in the form of credit transfers, the Commission has difficulty in accepting this argument in its entirety.

Graduate programmes are probably the most flexible at any university, the nature of the programme being decided upon by the student and his or her graduate supervisor in close consultation. There must, furthermore, be some question of the alleged role of the residency requirement in impeding women from completing the doctorate. The master's degree requires one or two years residency, the doctorate two years after a master's degree or, after an honours baccalaureate, three years. Yet, as Table 9 shows, the residency requirements have not prevented 2,276 women from completing masters' degrees at Nova Scotian universities between 1969 and 1983. Since 1979, women have constituted 43% to 45% of the persons graduating with this degree. That the master's programme is available at more than one university in the province does not seem to be significant. Of the 1,233 persons, men and women, enrolled in a master's programme at Nova Scotian universities in 1982-83, no less than 1,015 or 82.3% were enrolled at universities in the Halifax metropolitan area, and would be expected to fulfil the residency requirements by living in that area. (And of the 664 women enrolled in all graduate programmes throughout the province 599, or 90.2%,

TABLE 8
Appointments of Women in Nova Scotian and Canadian Universities
1970-1983

Year	Nova Scotia			Canada as a Whole (1980 & After Exc. Quebec)		
	No. of Women Apptd.	Total No. Apptd.	% of Women	No. of Women Apptd.	Total No. Apptd.	% of Women
1970	45	255	17.7%	625	4,039	15.5%
1971	30	190	15.8%	589	3,497	16.8%
1972	37	171	21.6%	481	2,788	17.3%
1973	31	150	20.7%	491	2,460	20.0%
1974	53	200	26.5%	657	2,895	22.7%
1975	47	195	24.1%	609	2,753	22.1%
1976	46	157	29.3%	586	2,659	22.0%
1977	48	152	31.6%	647	2,585	25.0%
1978	48	170	28.2%	594	2,400	24.8%
1979	50	157	31.9%	567	2,160	26.3%
Subtotal 1970-79	435	1,797	24.2%	5,846	28,236	20.7%
1980	58	159	36.5%	567	1,863	30.4%
1981	40	119	33.6%	516	1,891	27.2%
1982	60	187	32.1%	559	1,920	29.1%
1983	38	132	28.8%	N/A	N/A	N/A
Subtotal 1970-82	593	2,262	26.2%	7,488	33,910	22.1%
Total 1970-83	631	2,394	26.4%	N/A	N/A	N/A

Source: Statistics Canada, UCASS and Catalogue 81-569

TABLE 9
Earned Doctorates and Master's Degrees
Awarded by Nova Scotian Universities
1969-1982

	Doctorates				Masters			
	M	F	T	%F	M	F	T	%F
1969-70	22	—	22	0	179	58	237	24.5
1970-71	24	5	29	17.2	242	91	333	27.3
1971-72	40	5	45	11.1	204	102	306	33.3
1972-73	39	2	41	4.9	286	82	368	22.3
1974	30	4	34	11.8	210	91	301	30.2
1975	35	9	44	20.5	217	114	331	34.4
1976	39	7	46	15.2	241	119	360	33.1
1977	33	4	37	10.8	312	175	487	35.9
1978	26	7	33	21.2	372	226	598	37.8
1979	28	5	33	15.2	322	266	588	45.2
1980	38	6	44	13.6	293	234	527	44.4
1981	31	13	44	29.5	313	236	549	43.0
1982	32	3	35	8.6	295	238	533	44.7
Subtotal 1969-82	417	70	487	14.4	3,486	2,032	5,518	36.8
1983	25	4	29	13.8	322	244	566	43.1
Total	442	74	516	14.3	3,808	2,276	6,084	37.4

Source: Statistics Canada catalogues 81-569 and 81-229.

attended and evidently kept residence at metropolitan universities.)

If women in such numbers are prepared to fulfil the requirements for the master's, it is hard to understand why more have not proceeded to the doctorate. Unlike the master's, however, the length of time needed to undertake research and complete the doctorate frequently exceeds the length of the residency requirements: but the length of the degree cannot be considered a hardship by anyone seriously dedicated to an academic career. The length of time needed for the doctorate is essential for the depth of scholarship required, and cannot be diminished except at the risk of academic excellence.

It may well be that the problem lies less in the conditions of study required for the doctorate than in social attitudes toward women studying towards this degree or toward women as academics. The solution is probably better guidance counselling, at both the high school and university level. Intellectually gifted women should be directed towards an academic career, for which the prerequisite is the notably arduous and time-consuming doctoral degree.

(ii) Prospects for the Recruitment of New Faculty, 1985-2000

They should, however, be made aware that the prospects are bleak for any person considering starting an academic career in Nova Scotia between now and the year 2000. The reduced number of openings for new academics in the 1980s and 1990s is one of the consequences of the great expansion in the size of university faculties during the 1960s and early 1970s. The new faculty at that time were young people, as was to be expected. Some ten to fifteen years later, they are middle aged, tenured, and unlikely to retire for another ten to thirty years. The figures in Table 10 reveal the situation at a glance. Most of the faculty, 1,338 out of 1,855, or 72.1%, are between the ages of 35 and 54. Only 175, or 9.4%, are under 35.

Relatively few professors can be expected to retire in the next ten years. Only 288 professors, or 15.5% of the total, might be expected to retire during that time, given a retirement age of 65. A consequence of the clause in the Charter of Rights forbidding discrimination in employment on the grounds of age may be to reduce this number still further, if significant numbers of professors of 65 and over elect to continue teaching. Even today, some 54 persons aged 65 and over, 2.9% of the total faculty, are professors in Nova Scotian universities. In short, there is likely to be only a limited number of openings for graduates to replace retiring professors.

Even more serious for the employment prospects of doctoral graduates is the projected decline in student numbers. This reflects a more general downward trend in the number of young people eligible for university entrance; nor is it likely that universities may expect increases in enrolment due to a higher level of high school completion or a higher university participation rate among qualified school leavers. MPHEC estimates that since 1980 between 75% and 80% of the relevant age cohort now achieve

TABLE 10
Age of Faculty at Nova Scotian Institutions
1983-84

Age Group	Acadia	AST	Dalhousie	MSVU	NSAC	NSCAD	St.F.X.	SMU	TUNS	UCCB	UKC	U.Ste.A.	Total	% of Faculty
65 and over	7	1	21	4	—	—	9	7	1	2	1	2	54	2.9
60-64	11	1	55	3	2	1	13	7	8	2	1	1	105	5.7
55-59	27	—	75	9	7	4	13	20	17	6	2	3	183	9.9
50-54	30	1	104	14	4	2	21	20	16	10	1	3	226	12.2
45-49	42	2	168	10	7	7	29	31	22	10	2	2	332	17.9
40-44	49	1	222	31	10	11	35	55	12	14	2	5	447	24.1
35-39	38	—	160	36	12	12	21	21	12	12	2	7	333	18.0
30-34	16	—	59	14	9	8	11	4	5	4	—	4	134	7.2
25-29	8	—	8	3	2	2	3	8	1	4	—	1	41	2.2
Total	228	6	872	124	53	47	155	173	94	64	11	28	1,855	100.0

Source: Statistics Canada, UCASS.
Note: Percentages may not total 100.0, due to rounding.

junior and senior matriculation: the level of high school completion is thus already high. Furthermore, between 45% and 50% of Grade XI and XII students in Nova Scotia complete programmes and achieve grade levels that meet the published admission requirements of universities. University Student Information System (USIS) statistics suggest that, of those qualified, 80% to 90% enter a post-secondary programme within one year of high school graduation. In other words, nearly all high school graduates who qualify for university, proceed to university. Assuming that there is no marked increase in the participation rate of mature students, projections of the size of university enrolment can therefore be made with confidence on the basis of projections of the size of high school enrolments. After 1985, the trend of both high school and university enrolments is generally downwards.

In 1983-84 full-time undergraduate and graduate enrolment at Nova Scotian universities was 23,479. In 1984-85 the enrolment was 24,088. From 1976 to 1985 there has been an increase of 4,502 or 23.0%, that is 2.3% compound growth over nine years. MPHEC expects a small increase in enrolment, to 24,500, in 1985-86, and then a steady decline in the years thereafter. At best, the numbers of university students will decline by only 3,323, or 13.8%, between 1985 and 2000. At worst, the universities will lose 6,123 students, leaving the student population 25.4% smaller than it was in 1984-85.

These projections assume no significant change in current interprovincial migration patterns, inflow or outflow of students from or to other Canadian provinces, or in the numbers of foreign students. They assume that the percentage of persons more than one year out of high school entering universities on a full-time basis will remain about 20%. They do not allow for a drastic increase in the numbers of part-time students, but they do include a growth in graduate enrolment, currently between 7% and 10% of the total, of between 3% and 5%.

What will be the effects of a severe decline in student population on the size of the professoriate? Obviously, in making projections, one must make certain assumptions. One is that the number of professors who choose to remain after age 65 will continue to be about 55; thus projections for increase or decline in faculty size will be made on a base of 1,800, being the size of the faculty in 1983-84 (1,855), less 55. Another is that there will not be any significant movement of professors to positions outside the Nova Scotian university system: given the current and projected state of the North American academic job market, this would seem to be a justifiable assumption. The third major assumption is that the student:faculty ratio will remain the present 12 to 1 during the period under consideration. A decrease in the number of students will necessitate a decrease in the number of faculty corresponding to this ratio.

The effects of the decline in student numbers on the size of the faculty and on new hirings is shown in Tables 11A and 11B. In both instances, it is calculated that 535 professors will retire between 1986 and 2000. Not all of

TABLE 11A
Projected Enrolment and Faculty Requirements
1975-2000 (High Projection)

	Full-Time Enrolment	Increase (Decrease)	Required Faculty Decline	Faculty Retires	New Blood Opportunity	Target 2½%
1975-76	19,586					
1976-77	19,802	216				
1977-78	19,915	113				
1978-79	19,526	(389)				
1979-80	19,340	(186)				
1980-81	19,729	389				
1981-82	20,383	654				
1982-83	22,062	1,679				
1983-84	23,479	1,417				
1984-85	24,088	609				
1985-86	24,500	412				
1986-87	24,275	(225)	19	16	(3)	50
1987-88	24,050	(225)	19	33	14	50
1988-89	23,835	(215)	18	20	2	50
1989-90	23,615	(220)	18	37	19	49
1990-91	23,400	(215)	18	34	16	49
1991-92	23,095	(305)	25	36	11	48
1992-93	22,795	(300)	25	35	10	47
1993-94	22,500	(295)	25	41	16	47
1994-95	22,205	(295)	25	44	19	46
1995-96	21,915	(290)	24	30	6	46
1996-97	21,635	(280)	23	42	19	45
1997-98	21,350	(285)	24	46	22	44
1998-99	21,075	(275)	23	64	41	44
1999-2000	20,800	(275)	23	57	34	43
Totals		1,214	309	535	226	658

Source: MPHEC (enrolment figures and projections, faculty figures to 1985)

these places can be filled, for the size of the faculty will have to decline in pace with the decline in student numbers. In Table 11A, based on the least projected decrease in the student population, universities will be required to reduce the size of their teaching staff by only 309 positions, leaving 226 positions to be filled. In Table 11B, however, based on the greatest projected decrease in student population, 453 positions will have to be eliminated, leaving only 82 to be filled. In both cases it should be noted that about one-third of the openings will occur at the very end of the period, in 1999 and 2000. In Table 11A, 75 of the projected 226 positions will fall vacant in those two years; in Table 11B, 46 of the projected 82.

For comparison, the final column indicates the number of positions that would have fallen open if the universities were able to hire new staff to the extent of 2½% of the necessary faculty complement every year. This percentage corresponds to the number of new, young, faculty needed every year in a department the age structure of whose faculty followed a regular distribution pattern, with equal numbers of professors in each age group and where the length of the average academic career was forty years. The effect of recruitment at the rate of 2½% per annum in Table 11A would be to

TABLE 11B
Projected Enrolment and Faculty Requirements
1975-2000 (Low Projection)

	Full-Time Enrolment	Increase (Decrease)	Required Faculty Decline	Faculty Retires	New Blood Opportunity	Target 2½%
1975-76	19,586					
1976-77	19,802	216				
1977-78	19,915	113				
1978-79	19,526	(389)				
1979-80	19,340	(186)				
1980-81	19,729	389				
1981-82	20,383	654				
1982-83	22,062	1,679				
1983-84	23,479	1,417				
1984-85	24,088	609				
1985-86	23,450	(638)				
1986-87	23,235	(215)	18	16	(2)	48
1987-88	23,025	(210)	17	33	16	48
1988-89	22,815	(210)	17	20	3	47
1989-90	22,605	(210)	17	37	20	47
1990-91	22,400	(205)	17	34	17	47
1991-92	21,860	(540)	45	36	(9)	46
1992-93	21,335	(525)	44	35	(9)	44
1993-94	20,825	(510)	42	41	(1)	43
1994-95	20,325	(500)	42	44	2	42
1995-96	19,835	(490)	41	30	(11)	41
1996-97	19,360	(475)	40	42	2	40
1997-98	18,900	(460)	38	46	8	39
1998-99	18,445	(455)	38	64	26	38
1999-2000	18,000	(445)	37	57	20	37
Totals		(1,586)	453	535	82	607

Source: MPHEC (enrolement figures and projections, faculty figures to 1985)

enable 658 faculty to be hired, or 432 more than the numbers that it is projected will actually be required; in Table 11B, 607 faculty could be recruited, or 525 more than projected requirements. As can be seen, the skewing of the faculty age distribution by the large number of hirings in the 1960s and 1970s has had serious long-term effects on the prospects of graduates until the year 2000. After that date, if the situation remains unchanged, there will be another extensive hiring to replace those hired in the 1960s and 1970s — and a subsequent blight on the prospects for graduates for the next forty years.

(iii) Creation of Opportunities for Hiring New Faculty

An implicit assumption in the foregoing calculations has been that there will be no real increase or decrease over the year 1984-85 in the level of university funding. As is made clear in the following chapter, the revenues currently allotted to university education are already the maximum that can be expected, given the province's fiscal capacity. For this reason, the Commission cannot recommend the further provincial expenditure required to fund the early retirement of older professors in order to create

opportunities for the full-time employment of young academics and recent doctoral graduates.

The Commission feels, however, that such opportunities must be created if the universities are to retain their intellectual vigour. Rigorous implementation of the evaluative procedures recommended above and the subsequent dismissal of incompetents would seem to be the most satisfactory means of reducing the size of the present faculty and providing openings for new scholars. In this way, not only would the faculty be rejuvenated, but its academic standards would rise. Other methods might perhaps be favoured by some institutions. For instance, it is conceivable that faculty might agree to a freeze on progress-through-the-ranks payments so as to free funds for full-time employment of new scholars. A similar result could be obtained by a freeze on promotions until a certain ratio of full professors to associates, assistants and instructors, say as 1:2:3:½, was obtained in every department. Whatever option is chosen, the Commission believes that full-time openings must be found for younger scholars and recent graduates.

A Sense of Purpose

A sense of purpose involves a sense of priorities. In a university, those priorities must be academic: what subjects to teach, at what level, and what research projects involving specialized equipment and facilities the university is able to afford. Without established priorities, there can be no campus-wide sense of belonging to a corporate entity directed toward the accomplishment of specific academic tasks. Without established priorities, there will be poor allocation of resources and generally poor management performance on the part of the university administration. (Administration in this section should be understood to mean the system of academic governance, including deans, vice-presidents, the president and committees of senate, and not the non-academic support staff.)

This chapter has revealed that Nova Scotian universities suffer from uncertain admission standards; a combination of overly specialized and overly diffuse curricula; inadequate assessment of faculty performance; and staffing policies that impede the further recruitment of bright young academics. The existence of these problems suggests a failure on the part of Nova Scotian university administrations to establish a clear set of academic priorities and objectives. There is, in short, a lack of academic purpose.

The reasons why university administrations have failed to establish a clear set of priorities would seem to fall under two classifications: (a) the universities' political environment, and (b) the organization of the universities themselves.

(a) The Political Environment

Universities have not been assisted in formulating their own academic

objectives by the absence of provincial objectives for the post-secondary system. In Chapter 1, the Commission has recommended for government approval certain general objectives that are agreed to be proper for academic communities. If these objectives had been accepted previously, some of the problems of quality criticized above would not have occurred. It would be difficult, for instance, to justify intense and narrow specialization in occupational courses or, conversely, almost unlimited freedom to pick and choose courses from the curriculum if the universities had taken seriously Objectives 1 and 3. Intense specialization hardly promotes the general powers of the mind. Nor does it, any more than a cafeteria curriculum, permit the transmission of a common culture, which requires that students attend a substantial number of courses in common.

How the individual universities would meet these general objectives should, of course, be left to the universities themselves. The nature of the core courses intended to transmit a common culture and how they are taught are necessarily matters falling under the individual senate's responsibility. On the other hand, the government, upon representation of the intermediary body, should be prepared to ensure that public funding is not applied to programmes that are not consonant with the province's academic objectives.

(b) Administrative Organization of the Universities

Within the universities themselves, the establishment of clear academic priorities has been prevented by the nature of the universities' administrative organization, financial and staffing rigidities and, last but by no means least, a sometimes adversarial relationship between administration and faculty.

The very nature of the university, divided into multiple different departments teaching very different subjects, promotes centrifugal interests. Only rarely can the representatives of the different departments be expected to agree without difficulty upon any plan of action affecting the whole university. Any plan to revise academic priorities or to reallocate resources will almost immediately find an obstacle in entrenched departmental loyalties. Besides departmental loyalties, there are faculty union loyalties and, in the professional schools, professional loyalties that may also outweigh attachment to the university as a corporate entity.

University governance has been structured to give at least the appearance of accommodation of these disparate and centrifugal interests. The university senate brings together representatives of the faculty and departments in an effort to obtain a consensus upon various issues. A complex structure of committees has evolved to ensure that issues to be brought before the Senate are discussed in detail. The system, while democratic, cannot be expected to establish priorities easily.

Further difficulties arise with the division of powers within the university's governing structure. While the Senate is expected to rule on academic matters, the board of governors approves expenditures. There is

thus a built-in disjunction in the establishment of academic and financial priorities.

Establishing priorities necessarily implies making decisions that will affect staffing and expenditures. Yet in both these areas there are rigidities. Because the structure of governance is cumbersome and founded on consensus and compromise, there has been reluctance to question the academic performance of the various departments. The result has been the allocation of funding on a historical and incremental basis, without regard for the actual quality of, or good management of resources by, the departments so funded. Over the years, the allocation of funds has thus gone far to becoming prescriptive.

Revision of priorities and consequent reallocation of resources is further limited by the high degree of job security enjoyed by faculty and librarians through the tenure system and collective agreements with faculty unions.

The growth of faculty unions may have been attributable to poor management practices on the part of university administrations leading to an adversarial relationship between faculty and the administration. In Britain, a recent report for the Committee of Vice-Chancellors and Principals suggested that university vice-chancellors and presidents be recognized not only as the academic leaders but also as the chief executives of their universities.[14] In Nova Scotia, and perhaps in Canada as a whole, the problem would appear to be the reverse. Faculty seem to have lost confidence that the president and his staff have a profound sympathy for academic interests. As Paul Axelrod commented regarding the Ontario universities, 'By the 1970s, the presidents' administrative credentials were likely to be as strong as (or stronger than) their academic qualifications, whereas in the past the reverse had been true.'[15]

Whether it is possible to restore that confidence is a moot point: both faculty and administration appear to be caught in an organizational environment that renders them distant one from another. The growth of the so-called 'multiversity', including multiple departments, compelled administrators to adopt a primarily managerial role coordinating the various departmental units. On the other hand, this same growth in university size and number of specializations meant not only that faculty were divorced from the administration but that faculty in any one department no longer knew of what was done in another department and had no way of assessing its academic importance. They thus no longer had a feel for academic priorities; and because there was no scale of importance, all subjects, programmes and specializations became equally important. Any diversion of funds from a specific programme then became an example of administrative tyranny and disregard for faculty interests.

(c) New Administrative Mechanisms Required

Yet in order to surmount the crisis that is upon them, all members of the university must be prepared to cooperate and to make sacrifices for the

greater good of the corporate entity and for the greater good of higher education in Nova Scotia. It may be that this will occur only when all members of the university realize that there are in truth no further funds available and that adjustments will have to be made to manage the existing funds in the best way possible. But when this realization does sink in, the Commission believes that faculty, administrators and governors will have to agree upon a mutually acceptable, reorganized, form of university governance that is able to establish academic priorities and thus restore a sense of purpose to the university.

The Commission expects and, indeed, hopes that each university's priorities will be somewhat different, yet coordinated with those of the other institutions within the Nova Scotian university system. Some universities may place a greater emphasis on teaching, others on research; some may stress academic subjects, others occupational or professional subjects. Some institutions may offer the full three- or four-year undergraduate course in a subject; others may prefer to offer only the first two years. It may be that some institutions prefer to offer programmes that exclude a core curriculum in the arts and sciences. As mentioned above, these programmes should not carry academic degrees, but rather certificates and diplomas. The possible transfer of such programmes from the academic system to the occupational education system described in Chapter 5 might be contemplated. Final decisions regarding priorities should be made in consultation with the intermediary body, for the interests of university education in Nova Scotia as a whole must be considered.

As this chapter has shown, a clear scale of academic priorities will be necessary if universities are to

- agree upon the qualifications necessary for a student to matriculate and graduate
- establish a curriculum that will ensure that graduates are participants in a common culture (as identified in Objective 3, p. 38)
- set teaching and research standards for faculty and evolve satisfactory methods of evaluating performance
- develop opportunities for more young academics to join the full-time staff of the institutions

The universities will have to evolve new administrative mechanisms to ensure that priorities are set and a sense of purpose restored. Obviously, each university will have its own approach, dictated by the circumstances that prevail on each campus. The Commission does, however, have certain observations to make on this matter. The Commission does not believe that the new administrative structure should include an amalgamated Board of Governors and Senate. All experience points to such an amalgamated body as being as cumbersome and slow in coming to decisions as is the present

Senate. Rather, the Commission sees merit in a central planning and resource allocation committee that enjoys the confidence of both Senate and Board of Governors and reports to both of them. The committee's chairman would be the President, and there would be both academic and lay members. This committee would be prepared to make hard decisions concerning planning, priorities, evaluation and accountability. In any case, whatever administrative structure is decided upon, the intermediary body should exercise a supervisory role to ensure that planning and resource allocation are performed efficiently at all universities in the province.

Recommendations

The Commission recommends that:

- **The secondary school system should ensure that all graduating students, whether proceeding to university or not, possess the fundamental academic skills of reading, writing, listening, studying, reasoning and performing mathematical and computer operations.**

- **A body, preferably established by and representing all the provincial universities, should set tests of ability for all prospective university students. There should be a Use of English (or, for francophone institutions, a Use of French) examination to test reading, writing and reasoning, and a Use of Mathematics examination to test ability to understand mathematical reasoning and perform mathematical operations.**

- **The universities should require that all applicants have successfully passed high school courses in English (or, for francophone institutions, French), mathematics, science, social science and another language, preferably the other official language, at the Grade XII level. Applicants should also have had liberal exposure to the fine arts during their high school years.**

- **There should be regular meetings between groups concerned with university education (administrators and faculty) and secondary education (administrators, teachers, guidance counsellors) to ensure that university entrance requirements and standards are known and understood throughout the educational system.**

- **The Department of Education should seek to provide the equivalent of one full-time counsellor for every 500 students at the high school level.**

- **School boards should try to increase the number of female guidance counsellors.**

- **The Department of Education should specify precisely what a guidance counsellor's duties are, and should ensure that counsellors are properly trained to provide them.**

- **A more accessible training programme and a more rigorous programme of professional development should be established for people who have been appointed as counsellors.**

- A counsellor's training should include courses that foster sensitivity to the special difficulties experienced by women, minorities and disabled people in making career decisions. Counsellors should be aware of the particular need to ensure that people in these groups are adequately informed about the full range of career and educational options open to them.

- Counsellors should encourage young women to consider careers in occupations in which women have not been strongly represented in the past, such as technology and the sciences.

- Counsellors should stress the absolute necessity of acquiring credits in courses prerequisite for entry to university disciplines.

- University counselling services should be made available where they do not exist at present and they should be better publicized where they do exist.

- The Department of Labour and Manpower should provide career and educational counselling for mature adults as well as for youths. Such counselling could be undertaken through the Youth Initiatives Programme guidance centres.

- A university education should be synonymous with a liberal education. In consequence, all students wishing an undergraduate or first degree, regardless of their field of specialization, should take a core curriculum. This core should consist of courses in the grammar and literature of whichever of the two official languages is their mother tongue, a modern language, philosophy, mathematics, history, political economy and a science.

- The core curriculum should stress the relationships between the subjects studied and should develop in the student the intellectual powers and abilities associated with educated people.

- Programmes at undergraduate or first-degree level that do not include the core curriculum should not result in a baccalaureate or higher degree but in diplomas or advanced certificates.

- To improve the standards of teaching in our universities, all doctoral students should be given a thorough grounding in the theory and practice of teaching.

- Certain professors currently in the universities should be given a training in teaching methods in their fields and should subsequently conduct short courses in effective teaching methods for other professors. Attendance at one of these courses could be made a qualification for continued appointment or tenure.

- **Teaching and scholarship must be given equal value to basic research and development when professors are assessed for tenure or promotion.**

- **Universities should require evidence of research planned for, and undertaken during, sabbatical leaves.**

- **Universities must introduce periodic reviews of academic performance by which the teaching and research competence of the faculty may be fully and fairly assessed. These reviews should be of two types:**

  (a) an annual review, and

  (b) a more complete review on occasions of contract renewal, consideration for tenure or promotion and, in general, once every five years.

Unfavourable reviews should result in disciplinary measures.

- **More women should be encouraged to seek the qualifications necessary for academic employment.**

- **The universities should make every effort to ensure that there are opportunities for the full-time employment of younger academics and other recently qualified graduates.**

- **The universities should take steps to develop an effective structure of governance that will enable the establishment of a clear set of academic priorities and the effective allocation of resources.**

Chapter Three

Universities: Finance

In the 1960s and 1970s universities in Nova Scotia faced the challenge of growth as enrolments increased dramatically. In 1962, full-time enrolments were less than 7,000 and by 1985 had risen to in excess of 24,000. The universities, assisted greatly by provincial government financing, responded to the demands of growth with the construction of new physical facilities, the development of new programmes, and the recruitment and hiring of additional faculty.

In the late 1970s it was widely predicted that enrolments would begin to decline and that strategies would have to be developed in response to the changed circumstances. What was not predicted or forecast, however, was the worst economic recession in forty years with the attendant decline in provincial government revenues. Moreover, rather than enrolment decline as predicted, the economic recession led to further significant increases in enrolment levels concurrent with the reduced economic base with which to support all activities claiming a share of government revenues.

Given enrolment pressures and the contraction of the government's revenue base, it is not surprising that the briefs to the Commission and the public hearings were focused in large measure on the problems of making adequate fiscal provision for post-secondary education in Nova Scotia. The Commission was repeatedly advised that programmes, institutions and students were underfunded. Access is being threatened, quality is in jeopardy, research is constrained, buildings can no longer be maintained, equipment is becoming obsolete, library holdings are incomplete, demands for computing capacity now outstrip supply and programme reductions are threatened.

The prospect of future enrolment declines, interacting with the reality of limited growth in government revenues, leads to a need for new approaches in financing university education. In this chapter, the Commission recommends that the financing of the universities by government should be established on a new basis that takes into account high student participation rates, the current levels of financing and the province's fiscal capacity. Other issues that were brought to the Commission's attention are also examined, namely, tuition fees, the financial aspects of accessibility, the financing of research and the need for greater financial support for universities from the private sector.

Background

(a) University Income

The income of Nova Scotia's degree-granting universities for the year ended March 31, 1984, totalled $237,000,000, or approximately $9,200 per full-time-equivalent (FTE) student.

The major sources of university income in Nova Scotia are as follows:

Sources	$(000's)	%
Government Grants		
Provincial	$146,500	61.8
Federal		
SSHRC/NRC/MRC	15,000	6.3
Other Federal	8,500	3.6
Foreign	700	.3
Total Government Grants	170,700	72.0
Fees		
Credit	33,700	14.2
Other	3,300	1.4
Total Fees	37,000	15.6
Bequests, Donations and Non-Government Grants	13,000	5.5
Investment Income	10,900	4.6
Miscellaneous	5,400	2.3
Total	$237,000	100.0

Source: Canadian Association of University Business Officers (CAUBO).

Income includes revenue from general operating funds, special purpose and trust funds, sponsored research funds and capital plant funds. The totals here differ from those in Table 10, Chapter 1, because revenues from the sale of services and products in ancillary enterprises such as residences, dining halls, bookstores, etc., are not included. Figures have, furthermore, been rounded, for greater clarity of exposition.

Over the ten years from 1974-75 to 1983-84, there have been slight changes in the proportion of university operating revenues represented by provincial and federal government grants, tuition fees, and gifts and investment income. Analysis using Statistics Canada figures (Catalogue 81-260) indicates the following changes in the components mentioned:

	1974-75	1983-84
• Provincial government grants	65.2%	63.7%
• Tuition fees	17.1%	16.0%
• Gifts and investment income	11.4%	10.2%
• Federal government grants	6.3%	10.1%

As can be seen, federal government grants, principally for research, are now a more significant source of funding than before, while the importance of the other components has declined slightly.

Provincial government operating grants and the students' tuition fees, however, make up more than 80% of university operating income. Both grant and fee revenues have increased at approximately the same rates since 1974-75. On a per FTE student basis, the amounts have roughly doubled over the last ten years.

Per Full-Time-Equivalent Student	1974-75	1983-84	% Increase
Provincial operating grants	$2,890	$6,074	110%
Tuition fees	$ 756	$1,522	101%

The proportions of university revenues derived from the various sources differ from province to province. By comparison with the Canadian average, it can be seen from CAUBO data that Nova Scotian universities are less dependent upon provincial operating grants, though these do form the major source of revenue.

	Nova Scotia	Canada
• Provincial operating grants	61.8%	69.4%
• Tuition fees	14.2%	10.1%
• Investment income	4.6%	2.8%

Credit course tuition fees account for a higher percentage of university income than the Canadian average, and for much more than in Quebec and the western provinces, where they account for 6% and 9% respectively. New Brunswick universities are more dependent on tuition fees for revenue than are Nova Scotian universities, and Ontario universities are slightly less dependent. Comparative data for Nova Scotia and selected other provinces are provided in Table 1.

Details of university income for the twelve Nova Scotian universities are given in Table 2. Dalhousie University, including King's, is by far the largest with an income in excess of $100 million. Six institutions, including Acadia, Saint Mary's, the Technical University, Saint Francis Xavier, Mount Saint Vincent and University College of Cape Breton are in the $10 to $25 million range and four institutions have incomes in the $1 to $6 million range.

Provincial government grants and credit course tuition fees are the major sources of income for all universities, as indicated in Table 3. The College of Art and Design and Université Sainte-Anne are most dependent on these

TABLE 1
Universities of Nova Scotia and Selected Other Provinces
Interprovincial Comparison of 1983-84 Income
As a Percentage of Total Operating Income, Excluding Ancillaries

	Nova Scotia %	New Brunswick %	Quebec %	Ontario %	Manitoba %	Saskatchewan %	British Columbia %	Canada %
Government Grants								
Provincial	61.8	67.4	74.8	64.5	69.6	68.4	70.8	69.4
Research Granting Councils	6.3	4.0	6.8	7.7	6.6	7.0	7.9	6.9
Total Federal	9.9	7.8	8.9	9.8	12.3	8.8	10.4	9.2
Tuition Fees (Credit Courses)	14.2	14.6	6.0	13.5	9.1	9.7	8.6	10.1
Bequests, Donations and Non-Government Grants	5.5	2.1	5.0	6.2	5.3	6.1	4.0	5.4
Investment Income	4.6	4.8	1.9	3.1	2.0	2.6	3.5	2.8

Source: Canadian Association of University Business Officers, *Financial Statistics of Universities and Colleges, 1983-1984.* (Income from ancillary operations, such as residences, dining halls, bookstores, etc., are not included.)

TABLE 2
Universities and Colleges of Nova Scotia
Total Income, Excluding Ancillary Operations
Year Ended 31 March 1984
(Thousands of Dollars)

Revenues	Acadia	AST	Dal/Kings	MSVU	NSAC	NSCAD	StFXU	SMU	TUNS	UCCB	USteA	Total
Government Grants												
Provincial	15,672	617	65,722	8,139	5,724	4,607	12,060	11,763	11,771	7,553	2,894	146,522
Federal												
SSHRC/NRC/MRC	582	—	11,138	242	69	—	622	871	1,315	130	—	14,969
Other Federal	308	—	3,401	343	240	—	94	1,290	2,212	606	—	8,494
Foreign	—	—	738	—	—	—	—	—	—	—	—	738
Total Government Grants	16,562	617	80,999	8,724	6,033	4,607	12,776	13,924	15,298	8,289	2,894	170,723
Fees												
Credit	5,365	140	11,259	2,910	232	850	3,389	5,118	1,548	2,398	470	33,679
Other	16	9	2,472	56	148	48	123	125	263	52	—	3,312
Total Fees	5,381	149	13,731	2,966	380	898	3,512	5,243	1,811	2,450	470	36,991
Bequests, Donations and Non-Government Grants	1,738	253	8,987	230	12	15	364	294	1,084	—	18	12,995
Investment Income	1,414	9	7,210	438	—	45	834	577	240	135	27	10,929
Miscellaneous	121	4	4,136	147	4	—	469	197	107	152	26	5,363
Total Revenues	25,216	1,032	115,063	12,505	6,429	5,565	17,955	20,235	18,540	11,026	3,435	237,001

Source: Canadian Association of University Business Officers, *Financial Statistics of Universities and Colleges, 1983-1984.* (Income from ancillary operations, such as residences, dining halls, bookstores, etc., are not included.)

two sources while Dalhousie, the Technical University and the Atlantic School of Theology are the least dependent.

TABLE 3
Provincial Government Grants and Tuition Fees
As a Percentage of Total Income of Nova Scotian Universities
1983-84

Nova Scotia College of Art and Design	98.1%
Université Sainte-Anne	97.9%
Nova Scotia Agricultural College	92.6%
University College of Cape Breton	90.3%
Mount Saint Vincent University	88.4%
Saint Francis Xavier University	86.0%
Acadia University	83.4%
Saint Mary's University	83.4%
Atlantic School of Theology	73.4%
Technical University of Nova Scotia	71.8%
Dalhousie University/King's	67.0%

This is because the last-named institutions draw more on other sources of income than other institutions do. The other sources of income are federal government and non-government grants, bequests and donations and investment income. In most cases, these revenue sources are provided to the universities for very specific purposes, such as research, scholarships and support of designated programmes or activities. The funds are usually not available for general purposes and have come to be known as restricted funds.

There is a wide variation among the institutions in revenue per student, as indicated in Table 4. Average revenue per full-time equivalent student for all institutions is $9,188. On an institutional basis, revenue per student ranges from a low of $4,987 to a high of $16,306.

TABLE 4
Revenues Per Full-Time Equivalent Student
Nova Scotian Universities
1983-84

Technical University of Nova Scotia	$16,306
Nova Scotia Agricultural College	13,856
Université Sainte-Anne	12,675
Dalhousie University/King's	12,566
Nova Scotia College of Art and Design	9,678
Atlantic School of Theology	7,878
Saint Francis Xavier University	6,801
Acadia University	6,795
Mount Saint Vincent University	5,456
Saint Mary's University	5,249
University College of Cape Breton	4,987

Sources: CAUBO, MPHEC.

Many factors account for the disparities in revenue per student. The level and type of programme offerings and the extent of sponsored research activity are the most significant.

(b) Enrolments

Since 1979-80, there have been dramatic increases in enrolments at Nova Scotian universities. Table 5 details the growth in enrolment at each institution from 1980 to 1984 and actual 1984 enrolments. During this period the aggregate number of full-time equivalent students increased 21.8%. The largest increases were recorded at Saint Mary's — 1,111 (40.5%); Dalhousie — 938 (12.1%); University College of Cape Breton — 726 (48.9%); and Acadia — 701 (23.3%). In 1984-85 and 1985-86 further aggregate increases of approximately 3% have been recorded. From 1979-80 to 1985-86, full-time student enrolments have increased 5,993, from 17,986 to 23,979. This aggregate increase of 33.3% in six years is approximately equal to a compound rate of growth of 4.9% per annum.

From 1980 to 1984, university undergraduate enrolments, expressed as a percentage of the 18- to 21-year-old age cohort in the Nova Scotian population, increased from 24.4% to 30.1%, an increase of 23.4%. This dramatic increase in the rate of participation accounts for much of the growth in enrolments.

In Canada, approximately 23% of the 18- to 24-year-old age cohort currently participate in post-secondary education. This is approximately 3 points higher than the 20% which is considered a normal level over the long term. It is argued by many that poor employment prospects have resulted in a larger number of students seeking post-secondary education, and in larger numbers remaining in the system longer in order to obtain further qualifications.

It should be noted, however, that enrolments are not expected to increase indefinitely. Projections of future enrolment levels indicate a decline of 15% to 20% by the year 2000. The decline is expected to begin in 1986-87, and by 1990-91 total enrolment will be 1,100-2,100 less than in 1985-86. There is growing evidence of the projected decline. September 1985 enrolments of first-year students at Nova Scotian universities are down 4.1%, a decrease of 287 students as compared with 1984-85.

As mentioned above in Chapter 2, the main reason for the projected decline is a reduction in the population of 18- to 24-year-olds, who account for more than 85% of full-time enrolments. In 1981 there were 17,545 eighteen-year-olds in Nova Scotia and by 1999 there are projected to be 11,940, a decrease of 32%. Dramatic increases in participation rates are not likely to dampen the effect of reduced numbers in the 18-to-24 age cohort. Currently 80% to 90% of those high school students who meet the published admission requirements of universities actually attempt a post-secondary programme. On the other hand, the introduction of four-year B.A. and B.Sc. degrees by all Nova Scotian universities, and increased participation by mature students, could slow the expected decline.

TABLE 5
Enrolment in Nova Scotian Universities and Colleges
Full-Time Equivalent Students
1980-1984

Institution	1983-84	Enrolment Increase 1980-1984	4 Year % Increase
Dalhousie University	8,660	938	12.1
Saint Mary's University	3,855	1,111	40.5
Acadia University	3,711	701	23.3
Saint Francis Xavier University	2,640	397	17.7
Mount Saint Vincent University	2,292	394	20.8
University College of Cape Breton[a]	2,211	726	48.9
Technical University of Nova Scotia	1,137	343	43.2
N.S. College of Art and Design	575	1	—
University of King's College	497	111	28.8
N.S. Agricultural College[a]	464	30	6.9
Université Sainte-Anne	271	(22)	(7.5)
Atlantic School of Theology	131	11	9.2
	26,444	4,741	21.8

Note
a. Enrolment figures for University College of Cape Breton and N.S. Agricultural College include enrolments in non-degree programmes. In 1983-84 these were 650 and 218 respectively.
Source: MPHEC

Requests for Increased Funding

The future of government funding for post-secondary education is the single most important issue that institutions are concerned about at this time. The Commission was repeatedly told by institutions, faculty and student associations of the need for more financial resources from government. At the same time, the federal government has announced reductions in the rate of increase in cash transfers to the provinces through Established Programmes Financing. There is great concern that support for post-secondary education will be one of the areas targeted for significant cutbacks by governments at all levels.

During the course of its public hearings and many meetings and discussions with university officials, faculty members and students, the Commission was advised that the universities were not being provided with adequate revenues. It was repeatedly argued that absolute increases in government grants to the universities were less than sufficient to provide for continuing growth in enrolments and high rates of inflation. Thus, in real terms, university revenues were being reduced rather than increased, when measured on a per student basis.

It is certainly true that there have been great increases in enrolments and in the inflation rate over the past few years. In the period 1980 to 1984, enrolments increased 21.8%, while in the same period prices, as measured by the Consumer Price Index, rose 43.4%. Yet it is also true that to respond to

the dramatic growth in enrolments and to the inflationary pressures since 1980, the universities of Nova Scotia have sought revenue increases in excess of those necessary to compensate for the general rate of inflation.

Universities requested grant increases at above the general rate of inflation because price increases in non-salary university expenditures exceeded Consumer Price Index increases. Additional funds were also requested to provide for faculty promotions and to fund progress of faculty through the ranks from one salary level to another based upon years of service. The Association of Atlantic Universities in its *1985-1986 Brief to the MPHEC* (October 1984), has determined that these cost increases were 47.6% from 1980 to 1984, and that there will be a further increase of 6.53% in 1985.

	Enrolment Increases	Cost Increases	Total Annual Increase	Cumulative Increase
1980-81	2.09%	12.0%	14.3%	14.3%
1981-82	4.57%	13.6%	18.8%	35.8%
1982-83	6.86%	8.3%	15.7%	57.2%
1983-84	7.11%	7.2%	14.8%	80.5%

From these computations, the universities argue that, over the period 1980-84, grant increases of 80.5% were required to maintain a revenue base equal to that provided in 1979-80, on a per student basis. Provincial government operating grants in fact increased by 53.4% from $89,957,000 to $138,031,000. The universities argue, therefore, a shortfall of some $24,300,000 in only four years.

Interprovincial comparisons of revenue per student have also been used to support the position that Nova Scotian universities are being inadequately funded. Table 6 compares government operating grants per full-time equivalent student for each province. The Nova Scotian grant per FTE student of $5,637 is $911 less (13.9% less) than the average for all provinces. Nova Scotia ranks eighth, only slightly ahead of New Brunswick and Ontario. In the last ten years Nova Scotia has ranked no higher than eighth among all provinces, and for six of the last ten years ranked ninth, consistently 10% to 16% less than the national average. Had government funding in 1983-84 been increased by $911 per student to equal the average for all provinces, a further $22.9 million would have been required. This amount represents an increase of 16.6% in 1983-84 operating grants of $138,031,000 to Nova Scotian universities.

TABLE 6
Provincial Government Operating Grants to Universities
Per Full-Time Equivalent Student, All Provinces
1983-84

		As a % of Canadian Average
Newfoundland	$8,909	136.1
Alberta	8,266	126.1
British Columbia	7,765	118.6
Quebec	7,345	112.2
Saskatchewan	6,519	99.6
Manitoba	6,075	92.8
Prince Edward Island	5,796	88.5
Nova Scotia	5,637	86.1
New Brunswick	5,629	86.0
Ontario	5,581	85.2
Canada	6,548	100.0

Source: Secretary of State, Government of Canada, *Statistical Table, Support for Post-Secondary Education and Research in Canada, 1977 to 1985* (Ottawa, 3 April 1985).

To assess the universities' arguments, the Commission felt that it was necessary

- first, to analyse student enrolments and participation rates on an interprovincial basis and,
- second, to analyse government funding of the universities, also on an interprovincial basis.

These analyses appear in the following sections.

Analysis of Enrolments in Nova Scotian Universities

To further its understanding of the nature of the Nova Scotian student population and university participation rates, the Commission sought the following information:

- the extent to which Nova Scotian students attend university (the participation rate)
- interprovincial data relating to the migration of students
- enrolment data with respect to non-Canadian students enrolled at Canadian universities

In assessing the student participation rates for Nova Scotia, the Commission employed five different measures to compare Nova Scotia with all other Canadian provinces. In all five measures, Nova Scotia had the highest or second highest participation rate in Canada. The province exceeded the national average for participation by 15% to 37%, depending upon the measure selected.

Table 8 presents comparative data on participation rates for all provinces in 1983-84, and Table 7 sets apart the Nova Scotian data. There are four participation rates presented and each of them is determined by comparing the number of full-time students to the 18- to 21-year-old population in each province. The 18-to-21 age cohort is chosen because it provides the vast majority of students in each province. Part-time students are not usually included in these figures because it may safely be assumed that almost all of them are resident in the province where they attend university.

TABLE 7
Participation Rates in Nova Scotia
Full-Time University Enrolment
1983-84

		Participation Rate
Population of 18-21 year olds	68,700	
N.S. Students Studying in N.S.	15,370	22.4%
N.S. Students Studying in Canada	17,572	25.6%
Canadian Students Studying in N.S.	20,653	30.0%
Canadian and Non-Canadian Students Studying in Nova Scotia	22,458	32.7%

Home-province participation rate. As can be seen from Table 7, there are 15,370 resident Nova Scotians studying as full-time students in Nova Scotia itself. This number represents 22.4% of the 18- to 21-year-old population in Nova Scotia. This participation rate, of resident students studying in their home province, is the second highest in the country.

Canadian participation rate by home province. There are 17,572 resident Nova Scotians studying somewhere in Canada (including the 15,370 studying in their home province). This number represents a rate of 25.6%, second only to that of Prince Edward Island, which is 27.8%. The average rate for all provinces is 21.3%

Canadian participation rate. This rate measures the extent to which Canadian residents are studying in a particular province, relative to the 18-to-21 age cohort in that province. For Nova Scotia, this participation rate is 30.0%, as compared to the mean average rate for all provinces of 22.0%. By this measure, the Nova Scotian participation rate is the highest in the country.

Gross participation rate. This rate compares the actual university enrolment in each province with the 18-to-21 age cohort in that province. It includes home-province students studying in their home province, students from other places in Canada studying in that province, and foreign students. The gross participation rate for Nova Scotia is 32.7%, compared to 23.8% for the provinces of Canada as a whole. Nova Scotia has the highest gross participation rate in the country, 37.4% higher than the average for all of Canada.

TABLE 6
Participation Rates by Province
Full-Time University Enrolment
1983-84

	Population 18-21	Can. and Foreign Full-Time Enrolment	Gross Participation Rate	Canadian Enrolment	Canadian Participation Rate	Home Province Enrolment	Home Province Participation Rate	Home Province Enrolment In Canada	Canadian Participation Rate by Home Province
Newfoundland	47,500	8,027	16.9	7,796	16.4	7,219	15.2	8,219	17.3
Prince Edward Island	9,800	1,676	17.1	1,650	16.8	1,498	15.3	2,723	27.8
Nova Scotia	**68,700**	**22,466**	**32.7**	**20,653**	**30.0**	**15,370**	**22.4**	**17,572**	**25.6**
New Brunswick	56,800	14,155	24.9	13,431	23.6	10,449	18.4	13,493	23.8
Quebec	503,300	103,864	20.6	97,815	19.4	91,639	18.2	100,175	19.9
Ontario	662,900	183,119	27.6	167,206	25.2	153,591	23.2	160,425	24.2
Manitoba	76,900	20,653	26.2	18,364	23.3	16,598	21.0	18,174	23.0
Saskatchewan	76,600	19,132	25.0	18,305	23.9	11,594	15.1	12,985	17.0
Alberta	190,100	40,210	21.2	37,778	19.9	32,730	17.2	36,856	19.4
British Columbia	199,100	37,214	18.7	34,230	17.2	29,460	14.8	33,199	16.7
Canada	1,893,700	450,508	23.8	417,218	22.0	370,177	19.6	403,821	21.3
N.S. Ranking			1		1		2		2
N.S. — % Higher than Canadian Average			37%		36%		15%		20%

Sources: Postcensal Annual Estimates of Population, Statistics Canada, Catalogue 91-201A
Universities: Enrolment and Degrees, 1983-1984, Statistics Canada, Catalogue 81-204

	Participation Rates % Canada	 N.S.
Students enrolled in home-province universities	19.5%	22.4%
Plus net enrolments from other provinces and from Canadians living abroad and returning to Canada for university studies	2.5	7.6
Canadian students studying in Canada	22.0	30.0%
Plus enrolments from foreign students studying in Canada	1.8	2.7
	23.8%	32.7%

Participation rate per 1,000 of provincial population. Understanding the relationship between enrolments and total provincial population is a necessity, because federal transfers of funds to the provinces for post-secondary education are not distributed on the basis of provincial enrolments. Federal transfers are related to the size of each province's population as a whole, not to the size of the student population in each province.

Table 9 shows that Nova Scotia has the largest number of full-time university enrolments, 26.1 per 1,000 of population — 44.2% higher than the average for Canada. For a province the size of Nova Scotia, average participation rates would suggest that Nova Scotia's full-time university enrolment should be approximately 15,553 students. In fact, Nova Scotia's full-time enrolment in 1983-84 was 22,458.

TABLE 9
University Full-Time Enrolments
Per 1,000 of Provincial Population
All Provinces
1983-84

		As a % of Canadian Average
Nova Scotia	26.1	144.2
Ontario	20.8	114.9
New Brunswick	20.0	110.5
Manitoba	19.7	108.8
Saskatchewan	19.3	106.6
Alberta	17.1	94.5
Quebec	15.9	87.9
Newfoundland	13.9	76.8
Prince Edward Island	13.5	74.6
British Columbia	13.2	72.9
Canada	18.1	100.0

Source: Statistics Canada, Catalogue 81-204.

As a matter of interest, it may be noted that there is no significant difference in provincial rankings when the participation rate of full-time equivalent students (that is, including part-time students) per 1,000 of provincial population is calculated. Nova Scotia remains first, with 29.2 FTE students per 1,000 of population, 37.1% above the Canadian provincial average. See Table 10.

TABLE 10
University Full-Time Equivalent Enrolments
Per 1,000 of Provincial Population
All Provinces
1983-84

		As a % of Canadian Average
Nova Scotia	29.2	137.1
Manitoba	24.2	113.6
Ontario	23.9	112.2
New Brunswick	21.9	102.8
Saskatchewan	21.9	102.8
Quebec	20.4	95.8
Alberta	18.9	88.7
Newfoundland	16.0	75.1
Prince Edward Island	15.2	71.4
British Columbia	14.8	69.5
Canadian Average	21.3	100.0

Source: Statistics Canada, Catalogue 81-204.

Table 11 compares actual Nova Scotian enrolments with the enrolments that could be expected if Nova Scotian enrolments conformed to the Canadian average. It shows an excess of 6,905 students as compared to the average. Nova Scotia has 20% more Nova Scotian students studying in Nova Scotia than the Canadian average would suggest for a province the size of Nova Scotia. Nova Scotia also has enrolments of other Canadian and non-Canadian students which together exceed 4,300 full-time students and are 155% more than Canadian averages would suggest could be expected for a province the size of Nova Scotia.

Further detail is required in order to have a complete picture of the 5,283 undergraduates who come to Nova Scotia from other provinces in Canada to study at Nova Scotian universities. Table 12 indicates the number of students from other provinces who attend university in Nova Scotia, and the number of Nova Scotian students in each of the other provinces. In 1983-84 there were 2,202 Nova Scotian students who left Nova Scotia to attend university in another province of Canada. Nova Scotia is, however, a net importer of university students from each province in Canada. The total net import in 1983-84 was 3,081 students. Of this number, however, 633 students from New Brunswick and Prince Edward Island attended university in Nova Scotia according to an interprovincial agreement whereby operating grants were

TABLE 11
Home Residences of
University Full-Time Students
Nova Scotia
1983-84

Home Residence of Students	Nova Scotia Actual Enrolment	Canadian Average for a Province the size of N.S.	Excess	Excess as a % of Canadian Average
Nova Scotia	15,370	12,778	2,592	20%
Other Canadian	5,283	1,632	3,651	224%
Non-Canadian	1,805	1,143	662	58%
	22,458	15,553	6,905	44%

Source: Statistics Canada, Catalogue 81-204.

TABLE 12
Inter-Provincial University Enrolment Data
Full-Time Students 1983-84

	Students From Other Provinces Attending University in N.S.	Nova Scotia Students Attending University In Other Provinces	Maritime Students Attending N.S. Universities and Funded by Home Province (Net)	Nova Scotia Net Imports of Students Not Funded From Other Provinces
N.B.	1,856	796	349	711
P.E.I.	683	22	284	377
Nfld.	432	63	—	369
Ont.	1,042	703	—	339
Alta.	276	66	—	210
B.C.	179	128	—	51
Man.	82	33	—	49
Que.	406	371	—	35
Sask.	39	20	—	19
Unknown	288	—	—	288
	5,283	2,202	633	2,448

Source: Statistics Canada, Catalogue 81-204.

provided to the province of Nova Scotia by their respective provincial governments. (By this agreement, the other Maritime Provinces pay Nova Scotia the formula cost of educating students in programmes not provided in their own provincial universities.) The net result is that in 1983-84 a total of 2,448 students attended university in Nova Scotia for whom no funding was provided by the governments of their home provinces.

To recapitulate, the relatively larger student body in Nova Scotia is accounted for by three factors:

(a) the second highest participation rate for home-province students studying in the home province — 15% higher than average for Canada

(b) the number of students coming to Nova Scotia from every other province in Canada exceeds the number of Nova Scotian students studying in the other nine provinces — a net import of students from every province in Canada

(c) the number of foreign students studying in Nova Scotia increases student enrolments by a further 8.7%, which is third highest in Canada, behind Ontario at 9.5% and Manitoba at 12.5%.

The cumulative effect of these three factors results in student enrolments in Nova Scotia at a level that is disproportionately large for the size of the population of the province. In Nova Scotia there are 33 full-time students enrolled in the province's universities for every 100 people in the population aged 18 to 21. This is 37.4% more than the average participation rate in Canada as a whole. There are 29.2 FTE students enrolled in the province's universities for every 1,000 people in the provincial population as a whole. This is 37.1% more than the average FTE participation rate in Canada as a whole.

The significance of these high participation rates will become clearer upon comparison of operating revenues on a per student basis. **Here it may be observed, however, that Nova Scotian grants per student are of necessity dramatically lower than the grants per student in other provinces because the available funds in Nova Scotia are being spread over a student body that is relatively much larger.**

Analysis of Government Funding of Nova Scotian Universities

In analysing government funding of the universities, the Commission sought to determine:

- the current level of funding, by comparison with other provinces
- the province's fiscal capacity, both calculated and actual, so as to assess its ability to increase funding
- the nature of funding through Established Programmes Financing (EPF), so as to assess whether the province has delegated more university funding to federal-source revenues than other provinces have.

(a) Current Levels of Provincial Government Funding

Five distinct measures were used to compare the level of government operating grants to universities with general income/expenditure bases. Table 13 details the five measures employed. By three of the five measures, Nova Scotia ranks as the highest in Canada for level of funding provided to the universities relative to:

(a) general level of government spending;

(b) provincial gross domestic product; and,

(c) provincial personal income.

With respect to the first of these measures, namely provincial operating grants plus student aid as a percentage of provincial gross general expenditures, Nova Scotia has ranked first every year for the last nine years, except for 1981-82 when it ranked second. In measuring the level of support provided to universities on a per capita basis, in 1982-83 Nova Scotia also ranked near the top. In terms of provincial operating grants per capita population, Nova Scotia ranked second, after Alberta, and in terms of operating grants plus student aid, Nova Scotia ranked third, after Quebec and Alberta.

Each of these high rankings indicates an excess over national averages of 6% to 9% at the low end, and 37% to 85% at the high end. Each of these measures indicates very high levels of provision of university funding. The results of these measures stand in stark contrast to the indications of government support when measured on a per student basis earlier in this chapter.

It is now possible to explain the apparently paradoxical situation in Nova Scotia, where grants per student are the eighth lowest in Canada at 86% of the national average, but grants per capita of population are the third highest in Canada at 108% of the national average. **The foregoing analysis of the level of government spending shows that university funding has been a priority in the province of Nova Scotia by comparison with other provinces in the country. As the analysis of enrolments suggested, however, because of the very large number of students who are enrolled in Nova Scotian institutions, the provision that is made through operating grants is low on a per student basis.**

TABLE 13
Indicators of Government Support for Universities, All Provinces
1982-83

	Provincial Operating Grants Plus Student Aid As a % of Provincial Gross General Expenditures	Total University Operating Expenditures As a % of Provincial Gross Domestic Product	Provincial Operating Grants Per $1,000 of Provincial Personal Income	Provincial Operating Grants Per Capita	Provincial Operating Grants Plus Student Aid Per Capita
British Columbia	4.44	0.92	9.24	126.72	132.96
Alberta	3.05	0.91	11.14	156.88	159.86
Saskatchewan	3.81	1.13	10.05	123.29	129.94
Manitoba	4.55	1.17	11.14	133.74	140.69
Ontario	4.36	0.94	8.18	112.37	119.54
Quebec	4.46	1.42	13.11	156.97	169.93
New Brunswick	4.00	1.59	13.25	122.14	134.90
Nova Scotia	**4.56**	**2.05**	**14.24**	**143.75**	**150.36**
Prince Edward Island	3.32	1.15	11.49	102.45	113.39
Newfoundland	4.10	1.69	14.16	121.00	141.89
Canada	4.18	1.11	10.39	132.98	141.43
Index					
British Columbia	106.2	82.9	88.9	95.3	93.9
Alberta	73.0	82.0	107.2	118.0	113.0
Saskatchewan	91.1	101.8	96.7	92.7	91.9
Manitoba	108.9	105.4	107.2	100.6	99.5
Ontario	104.3	84.7	78.7	84.9	84.5
Quebec	106.7	127.9	126.2	118.0	120.2
New Brunswick	95.7	143.2	127.5	91.8	95.4
Nova Scotia	**109.1**	**184.7**	**137.1**	**108.1**	**106.3**
Prince Edward Island	79.4	103.6	110.6	77.0	80.2
Newfoundland	98.1	152.3	136.3	91.0	100.3
Canada	100.0	100.0	100.0	100.0	100.0

TABLE 13 (continued)

	Provincial Operating Grants Plus Student Aid As a % of Provincial Gross General Expenditures	Total University Operating Expenditures As a % of Provincial Gross Domestic Product	Provincial Operating Grants Per $1,000 of Provincial Personal Income	Provincial Operating Grants Per Capita	Provincial Operating Grants Plus Student Aid Per Capita
Rank					
British Columbia	4	9	8	4	7
Alberta	10	10	6	1	2
Saskatchewan	8	7	7	5	8
Manitoba	2	5	6	3	5
Ontario	5	8	9	8	9
Quebec	3	4	4	1	1
New Brunswick	7	3	3	6	6
Nova Scotia	1	1	1	**2**	**3**
Prince Edward Island	9	6	5	9	10
Newfoundland	6	2	2	7	4

Source: Ontario Ministry of Colleges and Universities; Council of Ontario Universities; and Ontario Council on University Affairs: Tripartite Committee on Interprovincial Comparisons, *Interprovincial Comparisons on University Financing* (Toronto: May, 1985).

(b) Fiscal Capacity and Actual Revenues

The Commission believes that it is important to take into account and fully recognize the fiscal capacity, both calculated and actual, of the province when considering its ability to make further provision for the university education both of Nova Scotian students and of students from other parts of Canada and the world.

The calculated fiscal capacity indicates the revenues each province could expect to obtain if every province taxed each of its taxable resources at the same rate. Data provided by the Department of Finance, Government of Canada, indicate that Nova Scotia's fiscal capacity, based on own-source revenues, is approximately 71% of the Canadian provincial average. After basic equalization is taken into account, Nova Scotia's fiscal capacity rises to a level of 86% of the Canadian provincial average. Table 14 presents the indices of fiscal capacity before and after basic equalization for 1983-84. Projections for 1984-85 suggest that Nova Scotia's fiscal capacity will continue to be approximately 16% less than the national average for Canada.

TABLE 14
Indices of Fiscal Capacity
Before and After Basic Equalization
(Per Cent of National Average)
All Provinces
1983-84

	Own-Source Revenues	Own-Source Revenues Plus Basic Equalization
Alberta	206.0	193.6
Saskatchewan	108.1	101.5
British Columbia	104.8	98.5
Ontario	97.0	91.1
Manitoba	80.7	85.9
Quebec	77.4	85.9
Nova Scotia	71.3	85.9
New Brunswick	66.9	85.9
Prince Edward Island	60.1	85.9
Newfoundland	59.3	85.9
All Provinces	100.0	100.0

The actual fiscal capacity of the provincial government to make provision for university education is indicated by the actual revenues received by the provincial government from taxation and other sources, including federal transfers but excluding loans. Analysis of provincial government revenues for the year ended 31 March 1984, is presented in Table 15. As can be seen, Nova Scotia obtained provincial revenues from all sources of $2,672 per capita. This amount is 93.3% of the average for all provinces and is further evidence of the province's less than average fiscal capacity.

TABLE 15
Provincial/Federal Governments of Canada
Revenue Analysis
Year Ended 31 March 1984

	Revenue Per Capita	Index
Alberta	$3,952	138.0
Prince Edward Island	3,328	116.2
Quebec	3,269	114.1
New Brunswick	3,102	108.3
Newfoundland	2,766	96.6
Saskatchewan	2,716	94.8
Nova Scotia	2,672	93.3
British Columbia	2,668	93.2
Manitoba	2,647	92.4
Ontario	2,385	83.3
All Provinces Average	2,864	100.0

Sources: Provincial Public Accounts

Projections of annual operating deficits for the year ending 31 March 1986 indicate Nova Scotia's deficit per capita will be as large as that of Newfoundland, the highest in the country. Details are given in Table 16.

TABLE 16
Federal and Provincial Governments of Canada
Projected Annual Operating Deficits Per Capita
Year Ending 31 March 1986

Government	Operating Deficit Per Capita	Index
Alberta	$107	31
Prince Edward Island	219	63
Saskatchewan	286	82
Ontario	295	85
British Columbia	308	88
New Brunswick	400	115
Manitoba	464	133
Quebec	471	135
Nova Scotia	545	156
Newfoundland	545	156
All Provinces Average	349	100

In summary, Nova Scotia's fiscal capacity is already 7% to 14% less than the Canadian average, and a growing deficit indicates that expenditures will continue to be restrained in future. There is, therefore, no excess fiscal capacity that would enable the province to provide for more than its fair share of out-of-province students.

(c) Established Programmes Financing (EPF)

Since 1977, the Government of Canada has contributed block funding to the provinces for health care and post-secondary education. The block funding, provided under the terms of the Federal-Provincial Fiscal Arrangements and Federal Post-Secondary Education and Health Contributions Act, 1977, is determined on the basis of per capita dollar entitlements. The 1983-84 entitlement, in respect of the post-secondary education financing programme, was $159.91 per capita. For Nova Scotia this amounted to a total of $137,414,000. The provincial entitlement is increased each year based on the rate of growth in Gross National Product and population.

In 1983 and 1984, increases of 6% and 5% plus population increases were used rather than GNP growth rates and population. The annual percentage increases, other than population, and the per capita entitlements for the years 1977 to 1986 are as follows:

TABLE 17
Established Programmes Financing
Per Capita Post-Secondary Entitlement and Annual Percent Increases
1977-1986

Years	Per Capita Entitlement	Annual Percent Increases
1977-78	$ 89.47	14.18%
1978-79	99.34	11.04%
1979-80	109.94	10.67%
1980-81	121.02	10.07%
1981-82	134.42	11.07%
1982-83	150.86	12.23%
1983-84	159.91	6.00%
1984-85	167.91	5.00%
1985-86	178.68	6.42%

Source: Canada, Department of Finance

The federal fiscal transfer for post-secondary education to the provinces includes two components: the transfer of income tax points and annual cash payments. The transfer of income tax points is a transfer of 'tax room' to the provinces by reducing personal and corporate federal income tax rates, thus enabling the provincial governments to increase their own personal and corporate provincial income tax rates. In 1983-84 the transfer of tax points to Nova Scotia amounted to $55,560,000. Cash payments to Nova Scotia amounted to $81,854,000.

Established programmes financing provides a major share of the funding of government expenditures on post-secondary education. The EPF share of post-secondary education expenditures in Nova Scotia for 1983-84 is

estimated to be in the range of 64.7% to 84.2%. Estimates vary as a result of differences in the level and types of programme expenditures included in the analysis. The 64.7% estimate results if vocational school and senior matriculation programmes, at the post-secondary level, are included. If only university, college and technical institutes are included, the EPF funding of $137 million in 1983-84 is 84.2% of total programme expenditures. All estimates include expenditures on operation, capital and student aid.

Future increases in EPF funding are expected, although it is doubtful if the rate of increase will be as high as in the past. The Government of Canada, in the May 1985 Budget, outlined its intention to limit the rate of growth of equalization and EPF transfers to provincial governments in order to effect savings amounting to about $2 billion in 1990-91. Details of the proposed changes in EPF funding are not available at the time of writing, but the intent to reduce the rate of increase is clear.

In February 1985, Dr. A. W. Johnson reported to the Secretary of State of Canada on federal financing of post-secondary education and research in Canada. The report's recommendations concerned reforms in the financing of post-secondary core operations and increasing the priority for sponsored research. One of Dr. Johnson's primary concerns was to determine whether provincial governments had increased their operating grants to university and community colleges at the same rate as increases in EPF intended for post-secondary financing. The record varied considerably, according to the province concerned, as Table 18 shows. Over the period 1977-78 to 1984-85 there has been a general increase in the federal share of provincial operating grants, but Nova Scotia is one of the provinces where the smallest such increase has occurred. In other words, despite allegations which the Commission has heard to the contrary, Nova Scotia has increased its operating grants at almost the same rate as increases in EPF. It may be noted that Nova Scotia is the only Atlantic province where the EPF post-secondary transfers do not exceed the amount of the provincial operating grants.

EPF funding remains, however, a very significant portion — 91.6% — of the provincial operating grant, and the Commission therefore believes the integrity of the EPF must be maintained. Dr. Johnson's recommendation in this regard is

> that the rates of growth of EPF/PSE fiscal transfers, and of provincial grants to universities and colleges, be harmonized. This would be achieved by:
>
> The affirmation by the Government of Canada of its willingness to escalate its PSE transfers at the rate of increase in GNP and population (the present "escalator"), and an invitation to the provinces to follow the same course in their grants to universities and colleges.

> The affirmation by the Government of Canada that, within this context, it would nonetheless respect the priorities adopted by individual provinces for PSE, by escalating its PSE transfers to them at the rates they themselves chose for increasing their grants to universities and colleges — up to the GNP rate.

The Commission strongly supports Dr. Johnson's position and urges the Government of Nova Scotia, in its current negotiations concerning EPF, to adopt a position which will result in harmonization of federal and provincial increases in post-secondary financing.

TABLE 18
EPF Fiscal Transfers for Post-Secondary Education
As a Percentage of Provincial Operating Grants to Universities and Colleges
1977-78 to 1984-85

	EPF/PSE Transfers as a % of Provincial Operating Grants		Increase in EPF/PSE Fiscal Transfer "Share" or Reduction in "Purely Provincial Share"
	1977-78	1984-85	
Newfoundland	83.3%	106.9%	23.6%
Prince Edward Island	101.5%	106.9%	5.3%
Nova Scotia	87.5%	91.6%	4.1%
New Brunswick	98.1%	101.8%	3.7%
Quebec	56.1%	59.6%	3.5%
Ontario	73.7%	88.7%	15.0%
Manitoba	80.3%	102.9%	22.5%
Saskatchewan	81.6%	90.3%	8.7%
Alberta	63.9%	73.1%	9.2%
British Columbia	78.9%	104.3%	25.4%
Canada	68.9%	79.6%	10.7%

Source: A. W. Johnson, *Giving Greater Point and Purpose to the Federal Financing of Post-Secondary Education and Research in Canada* (Ottawa: Secretary of State, 1985)

The Future of Government Financing of the Universities

The preceding studies have shown that, on the one hand, the Nova Scotian government has assigned a very high priority to funding the universities. Interprovincial comparisons show that this is so when provincial operating grants are related to levels of personal income, total government expenditures, provincial gross domestic product and provincial population.

On the other hand, the studies have shown that Nova Scotian university enrolments are exceptionally high when measured against the 18-to-21 age cohort and the provincial population. They are, in fact, the highest in the country: depending upon the measure used, they are some 37% to 44% higher than the Canadian average.

As a result of these high enrolments, what is actually a very high level of government funding becomes a very low level of funding on a per student basis — some 14% less than the Canadian average for funding per FTE student.

As was mentioned above, it is to redress this low level of funding per student that the universities have requested further increases of funding from the province. In the face of the universities' genuine needs, and of the prospect of declining EPF assistance from the federal government, it is imperative that the provincial government develop a clear position and policy regarding the level of funding to be committed to the universities in the future.

It is difficult to determine objective criteria for adequate funding of education, since an institution lacking funds to establish a new teaching or research programme that does not currently exist will claim that it is underfunded, just as will an institution requiring funds to make repairs on existing plant. The Commission believes, however, that the Nova Scotian university system should be provided with operating grants which, when measured on a per FTE student basis, would be at a level equal to the Canadian average. If such a policy had been adopted for 1983-84, the government would have committed itself to ensuring that $6,548 was provided per FTE student, instead of the $5,637 actually provided in that year (see Table 6).

On the other hand, the Commission recognizes that the province of Nova Scotia does not have the fiscal capacity to provide funding at the Canadian average for the current high levels of student enrolments. As the previous studies showed, the province's fiscal capacity is 7% to 14% less than the Canadian average, even after equalization payments. Nor, in the face of expected provincial deficits and reductions in EPF transfers, is it likely that more monies will become available for allocation to post-secondary funding. The Commission therefore believes that the province cannot justifiably be called upon to provide funding at the Canadian average for more than its fair share of university education on a per student basis. **In the matter of university funding, Nova Scotia should assume a position whereby the province provides for the higher than average participation rates of Nova Scotian students and also recognizes Nova Scotia's responsibility to provide for a fair share of students from other provinces in Canada and from other countries of the world.**

As shown in Table 11, university enrolments in any province are composed of three main groups: home-province students, other Canadian students, and foreign students. It is clearly the responsibility of the provincial government to provide funding for all home-province students, both full-time and part-time, who attend university in that province. Regarding the other two groups, it is also clearly the responsibility of the provincial government to provide funding at the Canadian average for the number of full-time students appropriate to the size of the province's population, that

number being computed with respect to the Canadian average enrolment per 1,000 of population. Provinces which accept the responsibility of funding these levels of enrolment at the Canadian average per student are evidently doing their fair share of university funding.

In the case of Nova Scotia, the province has an exceptionally large number of home-province students — some 20% more than the Canadian average. In 1983-84 home-province students accounted for an FTE enrolment of 17,398 (see Table 19).

In the same year, a province the size of Nova Scotia could be expected to have had an enrolment from other Canadian provinces of 1,168 full-time students. (Part-time students are not included in these calculations because the vast majority are home-province students. In 1983-84, for instance, 93.2% of part-timers in Nova Scotia were home-province students, and the Canadian average was 89.4%.) These 1,168 students are from provinces identified in Statistics Canada data. Every province may have, in addition, a number of students who are Canadians resident abroad, or who come from the Territories or from provinces or places not made known to Statistics Canada. In 1983-84, Nova Scotia's fair share of these students, as calculated from the Canadian average, would have been 464. Thus the province could have been expected to have 1,168 + 464 = 1,632 Canadian students in addition to the home-province students.

The Commission is well aware, however, that a more than average number of Nova Scotian students seek their university education in other provinces. In 1983-84, there were 2,202 of these students, well in excess of 1,168 students who might have been expected to come to Nova Scotia from other provinces. The Commission therefore believes that, in equity, the province should be prepared to fund a number of students from other provinces equal to the number of Nova Scotians attending university in the rest of Canada. Thus, in 1983-84, the provincial government should have been prepared to fund, at the Canadian average, 2,202 other Canadian students. Added to the 464 other Canadian students mentioned above, this makes a total of 2,666.

In 1983-84, the province's fair share of foreign students, according to Canadian averages, would have been 1,143.

Table 19 details the number of students included in the Commission's calculation of Nova Scotia's fair share of university operating grants.

Column two indicates the number of students whose funding has been shown above to be Nova Scotia's clear responsibility. The total of home province, other Canadian and foreign students comes to 21,207. Funded at the Canadian average of $6,548 per student, the provincial operating grant should have been $138.9 million in 1983-84. The amount actually granted to the universities in that year was $132.4 million, as reported in Table 20. **As might be expected from the high priority given to educational funding in this province, it appears that Nova Scotia is already assuming the major portion (95.3%) of its fair share of the responsibility for funding the**

TABLE 19
Recommended University Operating Grants
Nova Scotia
1983-84

	Total	N.S. Share	Other Governments Share
Nova Scotian Students	17,398	17,398	—
Other Canadian Students	5,283	2,666	2,617
Non-Canadian Students	1,805	1,143	662
	24,486	21,207	3,279
Grant Per Student	$6,548	6,548	6,548
Recommended University Operating Grants (millions)	$160.3	138.9	21.4

Source: (Actual Enrolments) Statistics Canada, Catalogue 81-204.

TABLE 20
Provincial Government Operating Grants to Universities
Nova Scotia
1983-84

Dalhousie University	$ 66,464,660
Acadia University	14,611,500
Saint Mary's University	12,202,260
Saint Francis Xavier University	11,466,910
Technical University of Nova Scotia	11,079,480
University College of Cape Breton	8,240,000
Mount Saint Vincent University	(,464,490)
Nova Scotia College of Art and Design	3,381,450
Nova Scotia Agricultural College	2,500,000
Université Sainte-Anne	1,788,490
University of King's College	1,364,300
Atlantic School of Theology	616,810
	141,180,350
Less recoveries from Provinces of New Brunswick and Prince Edward Island	6,401,250
	134,779,100
Less portion of University College of Cape Breton Grant attributed to non-degree programmes based upon proportion of FTE enrolment (29.4%)	2,422,400
Total	$132,356,700

Source: MPHEC

universities. In 1983-84, however, there was still a shortfall of $6.5 million.

The first column in Table 19 indicates the total number of students currently enrolled in Nova Scotian universities, namely 24,486. If this number were to be funded at the Canadian average of $6,548, the province would be responsible for providing an operating grant of $160.3 [illegible]lion. This would be $21.4 million above the Commission's recommended figure of $138.9 million.

As column three, the difference between columns one and two, shows, the 3,279 extra students who would require $21.4 million more funding from the province are not Nova Scotians. They exceed the numbers of out-of-province students a province with the population of Nova Scotia could reasonably be expected to provide for. First of all, Nova Scotia cannot expect further EPF funding to provide for the education of these students, because EPF funding is allocated according to the size of the provincial population, not according to university enrolments. Second, responding to the demand for higher education from Nova Scotian students alone requires an exceptionally high commitment of resource. The provincial responsibility to provide for 17,398 Nova Scotians receiving their education in their home province, and also for 2,202 being educated elsewhere, means that the province is responsible for 19,600 students. This represents a participation rate of 22.8 students per 1,000 of population, which is about 17% higher than the Canadian average. Third, the province does not have excess fiscal capacity available to provide an even higher commitment of resource. Nor does it seem reasonable that Nova Scotians should be called upon to foot the bill for more than their fair share of the education of students from other provinces, provinces which have received EPF funding to educate these students while Nova Scotia has not. The Commission has concluded, therefore, that Nova Scotia is unable to provide resources to the universities in support of all out-of-province students who apply to enrol in Nova Scotian institutions.

The Commission accordingly recommends that governments other than that of the province of Nova Scotia should provide the grant for the education of those students whose numbers raise Nova Scotian university enrolments beyond levels for which Nova Scotia alone can reasonably be expected to provide. There are both precedents and good reasons for suggesting that grants be provided for Nova Scotian universities by other governments. In existing arrangements between the three Maritime provinces there are intergovernmental transfers of funds in recognition of the fact that students are enrolled in university programmes outside their home province. Currently these agreements relate only to programmes which are not available to home-province students in their home province. Extending existing arrangements to include all programmes and, furthermore, to include all provinces would of course be of benefit to the Nova Scotian government and, in turn, to Nova Scotian institutions, since Nova Scotia is a net importer of students from every province in Canada. With respect to non-Canadian students, the Commission recommends that the province request the Government of Canada to provide, as part of its foreign aid programme, the operating grant for the number of non-Canadian students considered in excess of Nova Scotia's fair share of such students. Table 21 provides details of the number of students and the amount of government grant which would have been sought from each of the provincial governments and the Government of Canada in 1983-84. It should

TABLE 21
Commission Projections of Intergovernmental Transfers to Nova Scotia Required to Support Non-Home-Province Students 1983-84

Government	Number of Students	$ Million
New Brunswick	1,004	$ 6.6
Canada	662	4.3
Prince Edward Island	629	4.1
Newfoundland	344	2.3
Ontario	310	2.0
Alberta	195	1.3
British Columbia	45	.3
Manitoba	45	.3
Quebec	30	.2
Saskatchewan	15	.1
Total	3,279	$21.5

be noted that this table includes the 633 students from New Brunswick and Prince Edward Island and the $6.5 million in transfer payments made by their governments under existing arrangements for their education.

If the requested transfers are denied, the Commission recommends that the enrolment of out-of-province students should be restricted to levels for which the Government of Nova Scotia could reasonably be expected to provide.

To recapitulate, the practical effect of applying the recommendations set forth in this and previous sections would be the following:

(1) The government of Nova Scotia should increase its grant to the university system ($132.4 million in 1983-84) in harmony with increases in EPF transfers for post-secondary education.

(2) The Government of Nova Scotia should negotiate agreements with other governments, both federal and provincial, to the effect that these governments would reimburse the Government of Nova Scotia for funding the university education of that share of the previous year's enrolment that, according to calculations similar to those employed by the Commission, is considered to be the share that is the responsibility of those other governments. For each student whose education in Nova Scotia is deemed to be the responsibility of another government, Nova Scotia should be reimbursed a sum equal to the Canadian average operating grant per FTE student for the year in question. In 1983-84 such agreements would have increased the operating grant provided to the Nova Scotian university system by $21.4 million.

(3) Since Nova Scotia would be requesting that other governments' contributions to the total operating grant should be calculated with respect to the Canadian average operating grant per FTE student, the Commission believes that the province itself, to secure an intergovern-

mental agreement, would have to provide, as its share of the total operating grant, a sum likewise calculated with respect to the Canadian average. In 1983-84 this would have implied an increase of $6.5 million over the actual provincial grant. The Commission sees, however, that such an increase may well be contingent upon the progress of negotiations with other governments.

(4) If certain other governments should fail to come to an agreement with Nova Scotia concerning the reimbursement of funds expended in the education of their students in this province, the future enrolment of students from the jurisdictions concerned should be restricted to the level included in Nova Scotia's share of funding. That is to say, with respect to another province, the number should be reduced to a number equal to the number of Nova Scotians attending university in that province; with respect to the federal government, the number of non-Canadian students should be reduced to the number appropriate to a province with Nova Scotia's size of population

The foregoing calculations refer to the size of the total operating grant provided to the university system. It is now time to consider how that grant is, and should be, allocated.

Allocations of Operating Grants Among Institutions

Provincial government assistance to universities consists of three types of grants: unrestricted operating, restricted operating, and capital grants. Unrestricted operating grants are for general operating purposes and are not restricted in any way as to use. Restricted operating grants are also for operating purposes, but the application of the funds is limited to clearly specified purposes and the funds are not available for general operating purposes. Capital grants are, of course, to assist in the financing of capital projects.

MPHEC's current operational funding recommendations are based on a formula that takes into consideration historical levels of funding at each institution and average enrolment levels over the previous three years. Different costs for different programmes are compensated for by weighting enrolments in, say, medicine, more heavily than enrolments in arts. At present, operational funds are divided into four categories: a flat grant, an enrolment grant, a supplementary grant and an equalization grant. The size of the enrolment grant varies according to average weighted enrolment, while the size of the flat grant is determined by historical precedents and the amount of system funding available after the amount of the enrolment grants has been established. Supplementary grants are provided to support special needs such as new or expanded programme offerings, debt service, and so on. Equalization grants are designed to raise the base level of support

in universities whose flat grant as a percentage of total grant falls below the average system percentage.

Table 22 details the four grant components for 1983-84. The unrestricted operating grant for nine institutions is determined in accordance with the formula for enrolment and flat grants, and the operating grant for five institutions is determined on other than the formula basis. Nova Scotia Agricultural College, Nova Scotia Land Survey Institute and Nova Scotia Teachers College allocations in 1983-84 were determined directly by the province of Nova Scotia. The University College of Cape Breton allocation, until 1985-86, has been determined by increasing the previous year's grant, by the average increase of all other institutions. In 1985-86 the University College of Cape Breton was placed on the formula basis.

Restricted operating grants are provided to finance building alteration and renovation programmes as well as non-space programmes, including the acquisition of equipment, furnishings and library books. Restricted grants are not provided on a regular annual basis and thus, when they are available, each institution submits proposals for approval on an individual project basis. In 1983-84 there were no restricted operating grants provided to Nova Scotia universities. In 1982-83 restricted funds were provided as shown in Table 23.

The method currently employed by the Maritime Provinces Higher Education Commission to allocate restricted and unrestricted grants among the universities and colleges within Nova Scotia is essentially formula based. Having determined the amount of assistance which is available for each grant component, the allocation of all components, other than the supplementary, is calculated in accordance with a formula:

(i) Flat Grant — percentage increase over prior year's flat grant

(ii) Enrolment Grant — dollars per three year average of weighted full-time equivalent enrolment

(iii) Equalization Grant — complex allocation based on the average of a proportional and a levelling-up approach

(iv) Non-Space Grant — based on proportional share of weighted full-time equivalent students

(v) Alterations and Renovation Grant — based on proportional share of average of building square footage and weighted full-time equivalent students

The formulas that are employed in the allocation process contain two fundamental elements designed to ensure there are not dramatic shifts in the pattern of funding allocations. The flat grant which represents approximately 75% of all funds granted is based upon historical patterns of funding which have existed since 1978-79 and which in turn were determined based upon funding patterns of prior years. The enrolment grant recognizes changes in

TABLE 22
Provincial Government Grants to Nova Scotian Universities and Colleges
Allocation of Unrestricted Operating Assistance
Year Ended 31 March 1984

	Flat Grant	Enrolment Grant	Supplementary Grant	Equalization Grant	Total Grant
Formula Institutions					
Acadia University	$10,016,340	4,281,660	—	313,500	14,611,500
Atlantic School of Theology	403,060	181,440	—	32,310	616,810
Dalhousie University	46,971,700	15,998,040	3,426,300	68,620	66,464,660
Mount Saint Vincent University	5,233,790	2,118,960	—	111,740	7,464,490
Nova Scotia College of Art and Design	2,146,450	1,151,820	—	83,180	3,381,450
Saint Francis Xavier University	8,369,360	3,065,580	—	31,970	11,466,910
Saint Mary's University	8,472,100	3,276,720	400,000	53,440	12,202,260
University of King's College	898,660	410,400	—	55,240	1,364,300
Université Sainte-Anne	1,506,070	282,420	—	—	1,788,490
Non-Formula Institutions					
Nova Scotia Agricultural College	1,206,240	363,960	929,800	—	2,500,000
Nova Scotia Land Survey Institute	—	—	—	—	489,100
Nova Scotia Teachers College	4,026,560	707,940	—	—	4,734,500
Technical University of Nova Scotia	6,809,250	2,530,980	1,739,250	—	11,079,480
University College of Cape Breton	—	—	—	—	8,240,000
Total	$96,059,580	34,369,920	6,495,350	750,000	146,403,950

Source: MPHEC

TABLE 23
Provincial Government Grants to Nova Scotian Universities and Colleges
Allocation of Restricted Operating Assistance
Year Ended 31 March 1983

	1982-83
Acadia University	$ 463,870
Atlantic School of Theology	20,630
Dalhousie University	1,705,190
Mount Saint Vincent University	216,730
Nova Scotia Agricultural College	54,080
Nova Scotia College of Art and Design	117,970
Nova Scotia Land Survey Institute	16,090
Nova Scotia Teachers College	53,300
Saint Francis Xavier University	364,670
Saint Mary's University	351,270
Technical University of Nova Scotia	255,160
University College of Cape Breton	245,030
University of King's College	45,950
Université Sainte-Anne	54,600
Joint	119,760
Total	$4,084,300

Source: MPHEC

enrolments, but smooths the effect by using three-year weighted FTE enrolments, the latest year of which is two years before the year for which the allocation is being calculated. For example, the 1985-86 enrolment grant is determined on the basis of the average of 1981-82, 1982-83 and 1983-84 weighted FTE enrolments.

It is interesting to note that in 1979-80 the enrolment grant was reduced from 30% to 25% of the operating grant and the use of the three-year average of weighted full-time equivalents was introduced. The MPHEC adopted these changes in its formula to '. . . provide greater stability in the allocation of grants for institutions in a time of declining enrollments'. As noted earlier, in the four-year period 1980 to 1984, enrolments increased by more than 20%, and Table 5 indicates the rate of growth varied widely among the institutions. Had the formula not been changed, the enrolment grants provided would have been quite different. Institutions whose enrolment increased dramatically during that period would have been awarded a higher level of enrolment grant. Institutions with declining or relatively stable enrolments would have received relatively less enrolment grant.

The existing formula-based system of allocation ensures that there are no dramatic shifts in patterns of allocation and gives the appearance of a kind of equality in that all institutions to whom the formula applies are seen to be treated in an equal manner. Other than supplementary grants, which are less than 5% of total grants, there is little opportunity to recognize differing levels of need or priority in the system.

The Commission believes that the current formula-based system does not provide sufficient incentives for savings in programme delivery through more efficient use of resources or institutional cooperation. More importantly, the system does not provide incentives to encourage academic innovation that results in higher quality teaching or research or that realizes system priorities. The Commission, therefore, recommends that the system of allocation include a non-formula discretionary component which will be allocated on the basis of system needs and priorities to effect beneficial change in the system. The needs and priorities of each institution will have to be assessed in the context of all demands within the province. Allocation decisions will require a clear focus on quality and rationalization of available resources.

The Commission is also concerned that announcements respecting the amount of funding available to universities are not available on a timely basis. In recent years, government announcements respecting university financing could not be made until the Legislature had approved the provincial budget containing the estimates. The result has been that announcements have not been made until late spring, some months into the fiscal year commencing April 1. Although the universities therefore do not know the amount of funding that will be available to them, they are nevertheless required to make management decisions involving resource commitments. The Commission believes that it is necessary to extend the planning horizons beyond the one-year budget period and recommends that institutions be required to commit themselves to detailed financial planning covering a three-year period. It is also recommended that government make available to the system general indications of level of support for two years into the future, and that detailed allocations of operating grants be announced three to six months before the beginning of the institutions' fiscal year.

Several institutions criticized the existing formula-based allocations because the system responds too slowly to admitted inequities. At the same time as the system was introduced, it was recognized that equalization grants were required in order to bring some institutions up to a general level of base support. Also, because of the changing enrolment patterns among the institutions, it is now argued that the enrolment grant formula, when combined with the enrolment patterns that have emerged, may have produced an effect that is the opposite of what was intended. In situations where the allocation system has proven to have caused inequities, the Commission recommends that a much more expeditious method of assigning equalization grants be adopted in order to correct recognized inequities.

In the past, the government and MPHEC have utilized restricted funds in order to provide grants for specific designated purposes. The Commission appreciates the need for the continued use of the restricted funds concept. There is general support among the universities for the use of the restricted funds concept and the Commission recommends its continued use. At a time when the competition for available funds is intensifying, serious

consideration should be given to increasing the number of expenditure items financed by restricted funds.

Tuition Fees

(a) Relation of Fees to Instructional Costs

University tuition fees in Nova Scotia account for approximately 14.2% of university income. This compares with approximately 10.1% for all of Canada in 1983-84. Table 24 provides details of average tuition fees for undergraduate arts, commerce and science for 1985-86. The average tuition fee in Nova Scotia for this year is $1,464, the highest in Canada. New Brunswick and Prince Edward Island are approximately 5% and 8% less respectively.

TABLE 24
Undergraduate Arts, Commerce and Science
Average Tuition Fees
Full-Time Canadian Students, All Provinces
1985-86

		As a % of Nova Scotia
Nova Scotia	$1,464	
New Brunswick	1,393	95.2
Prince Edward Island	1,350	92.2
British Columbia	1,285	87.8
Ontario	1,215	83.0
Saskatchewan	1,071	73.2
Newfoundland	982	67.1
Alberta	859	58.7
Manitoba	822	56.1
Quebec	530	36.2

Source: Statistics Canada, Catalogue 81-219.

In 1983-84 university general operating costs in Nova Scotia, excluding sponsored research and trust fund expenditures, were approximately $7,250 per full-time-equivalent student. Of this amount, approximately $1,275 or 17.5% of revenues were generated by tuition fees. On average, it may be said that the cost per student is in the area of $7,250 and the price charged to the student, i.e., the tuition fee, is only 17.5% of the full cost. Society, through government, pays the additional cost of nearly $6,000 per student.

The Commission has given considerable attention to the issue of tuition fees and their relationship to the cost of a university education. After much deliberation, the Commission has concluded that students, as the primary beneficiaries of a university education, should assume a larger share of the cost of their instruction. The argument that university education should be provided at little cost to individuals does not rest on as sound principles as

does the argument in favour of free or low-cost elementary and secondary education. Public school education is a social necessity. It is needed by all citizens to give them the knowledge, literacy and numeracy that are essential if they are to function in today's society and, indeed, if today's society is to function effectively.

On the other hand, if attendance at elementary and secondary schools is a social necessity, attendance at university, despite the benefits that accrue to society from university graduates, is still a matter of personal option. In any case, in a university system where standards are maintained, higher education is limited to that minority of persons who are suitably qualified by ability and attainments. Furthermore, university graduates obtain considerable personal benefits from their education, not only the general satisfaction that comes from being more highly educated, but also the greater economic rewards that are frequently attributable to attainments in higher education. Thus, while graduates assuredly benefit society through their skills and knowledge, they receive commensurate — some would argue more than commensurate — personal remuneration. Hence, as the Graham Commission pointed out (III, 64-46),

> Far from serving the goal of equal opportunity and a less unequal income distribution [as do public subsidies to the school system], the public subsidies to the university student effect substantial income transfers in a different direction: from persons that do not attend university to those that do.

Regarding the beneficiaries of university subsidies, Graham went on to note that quantitative studies have demonstrated that 'the average lifetime income of recipients is substantially greater than that of their benefactors'. Thus it would be fair to say, in the words of a recent study of the Ontario university system, that[1]

> The principal net gainers from the university system are the middle- and upper-income groups at the expense of the lower-income groups. In this sense the university system is a large public expenditure program in which the relatively poor groups tend to subsidize the relatively rich.

The Commission therefore believes that public subsidies for higher education should be limited, firstly, to programmes which are socially necessary and unavailable without public support and, secondly, to induce students into occupations with a high social priority. There are public services which benefit a considerably larger portion of the population and are more important than university education and which, therefore, have a higher claim on government revenues.

The Commission does not, however, believe that university students should bear the entire cost of their education. Nor, because of the social and economic benefits due to the presence of university graduates in the

workforce, does the Commission recommend that government wholly withdraw from subsidizing university education. Rather, the Commission believes that students should enter into a partnership with society, through government, in which the student and society each share 50% of the instructional cost of a university education. The 50%-50% partnership arrangement is not arrived at as a result of any detailed calculations of benefits or costs, but rather reflects a move away from the current situation, in which a student pays less than 30% of instructional costs, toward a student level of support and responsibility which more fully recognizes the benefits derived. Instructional cost relates to those institutional costs incurred to instruct students (including the scholarship required to prepare courses). It does not include costs of basic research and development (see page 75), or costs associated with community services. Instructional costs on average are estimated to be approximately 60% of institutional costs. Instructional costs do vary, of course, depending upon the individual institution, the type of discipline, the type and level of programme, and the efficiency with which resources are utilized.

In terms of 1983-84 costs, average instructional costs would be approximately $4,350. Assuming fees were 50% of instructional cost, tuition fees would rise by $900 to $2,175. The Commission recommends that the increases be phased in over a five-year period so as to reach levels in 1990-91 that approximate 50% of instructional cost. To indicate why fees are being raised, the universities would be well advised to state the actual costs of instruction provided to each student when billing students for their tuition fees.

(b) Foreign Student Fees

A particularly controversial issue in recent years has been that of tuition levels for foreign students. Nova Scotian institutions have traditionally welcomed these students who have brought important dimensions of cultural, ethnic and economic understanding to their institutions. The essential question focuses upon the degree to which taxpayers of Nova Scotia should subsidize their presence.

The Commission believes that it is not unreasonable to expect that foreign students should pay the full instructional costs associated with their programme. Thus, if such a policy were implemented over a period of five years parallel with the proposals for domestic students, fees from foreign students would rise from approximately 60% of instructional costs today to 100% by 1990-91. Foreign students would thus cover the instructional component of their education in full, but not contribute to those costs more appropriately associated with Canadian society as a whole.

A special case can be argued for students from the most economically disadvantaged countries. A 1985 study by an AAU-MPHEC committee[2] recommended that an exemption from foreign student differential fees be granted to students from the twenty-five least developed countries, as

defined by OECD on the basis of GNP per capita. While these students may personally be well-off, it is evident that their countries are in need of university-trained graduates who can assist in the process of economic development. The exemption from differential fees would form part of the province's contribution to development assistance and encouragement of economic relationships with these nations. The Commission supports this recommendation.

(c) Programme Differential Fees

The Commission further recognizes that there are substantial differences in the costs of various programmes, and that there is a strong correlation between programme costs and future income potential for the graduate. The weighting system currently employed by MPHEC in the formula used to allocate grants among institutions reflects the reality of different programme costs. Consistent with a policy of the student paying a share of educational costs is the notion that the instructional cost used in calculating the student's share should in fact be the actual cost of instruction, as close as can reasonably be estimated. The Commission recommends, therefore, the introduction of differential fees to reflect major differences in programme costs. In this regard, the Commission suggests that the differential fee structure consider the following classifications:

- Arts and Commerce
- Science and Engineering
- Medical/Clinical
- Professional Programmes
- Graduate Programmes

The differentials between each class of fee are not recommended as programme cost information is not readily available for the Nova Scotian system at present.

Accessibility and Educational Opportunity Fund

Throughout its deliberations many respondents advised the Commission of the importance of having a declared provincial policy concerning access to post-secondary education for all Nova Scotians. The Commission required little persuasion in this matter and is strongly committed to its recommendation that government should adopt a policy that will ensure that no student with the requisite ability and attainments will be deprived of the opportunity to find a place in a programme of study in an institution in the province,

though not necessarily in the programme or institution of first choice. The province of Ontario adopted such a policy in the mid-1960s. The issue of access is many-sided, for a person's likelihood of attending university may be affected by many things, among them his or her home environment, place of residence, ethnic background, gender and physical ability. As far as possible, the Commission has considered these topics elsewhere in the report, and has made recommendations dealing with the ways in which access can be improved.

This section, as part of the chapter on finance, will consider the lack of financial resources, which is the single barrier most often thought to prevent equal access to all. The prospect of increases in tuition fees, as recommended above, without attendant improvements in student assistance programmes has the potential to deny access to a university education for some people. The Commission believes that lack of financial resources should not be an impediment to access for any qualified Nova Scotian. It is therefore essential that provision be made to assist needy students to acquire the amount of financial resource which will enable them to attend university. In the Commission's view, availability of the necessary amount of financial resource is a far more important consideration than the form of financial resource provided. Hence, to provide adequate funds to assist all Nova Scotian students in need of financial assistance, the Commission recommends the establishment of an Educational Opportunity Fund (EOF). The EOF would be a fund, created by statute and financed by the provincial government, which would provide assistance in the form of loans to students in approved post-secondary educational programmes who demonstrated a need for financial assistance. The assistance provided through the EOF would replace the existing Nova Scotia Bursary Programme, but would extend the limit of assistance available. Like the Bursary Programme, the EOF would supplement the assistance provided by the Canada Student Loans Programme.

It is proposed that the annual limit should initially be set at $2,400, an increase of $700 over the existing maximum amount of bursary assistance available. The $700 increase will provide for recommended tuition fee increases of some $200 in the first year and also for an additional $500 for such items as accommodation, meals, transportation, textbooks, supplies, etc. It is further recommended that in future years, increases in the maximum amount of assistance available would be provided to offset actual increases in tuition fee levels in the province. The introduction of differential programme fees as part of tuition-fee policy should also be provided for by extending the limits of the loan assistance available in future years.

The Commission is aware of arguments often advanced against loan programmes, particularly concerning the amount of debt that can be accumulated by an individual in the process of obtaining a university education. In recognition of these concerns, the Commission recommends that the student loan assistance obtained under the Educational Opportunity

Fund be repayable contingent upon, and according to a schedule directly related to, the student's ability to pay after having completed his or her education. Thus, repayments will be geared to an ability to pay, as opposed to a fixed repayment loan which can be insensitive to earning power and ability to repay. It is proposed that graduates and other university leavers would commence repayment once their income exceeded a certain minimum amount, and repayment would then be set at a percentage of annual gross income. Repayment plans would also recognize obligations the student may have assumed under the Canada Student Loans Programme.

Since loans will be repayable contingent upon the ability of each student to earn the minimum income required to trigger repayment, a number of loans will probably not be fully repaid. The Commission recommends that the amounts of these defaulting loans should be repaid from provincial government revenues as a subsidy to the Opportunity Fund. The cost to society then will be the cost of repaying advances to those students who have incurred indebtedness through the loan plan and who have not benefited in subsequent earning power. This amount is expected to be less than the amount that is granted to students each year in the current bursary programme without any assessment of the students' potential to benefit from university or their earning power following their education.

The Commission believes that adequate financial resources must be available to allow students in need to pursue a university education. In order to extend the amount of assistance available, the Commission believes it appropriate that the criteria for assessing needs be altered. The Commission supports the principle of personal and family resources being the first resources to be called upon in providing for education. It therefore recommends that financial needs continue to be assessed in relationship to the student's personal and family resources. In this respect, however, the Commission recommends that the province adopt criteria for use in assessing needs consistent with the criteria which are in use for the Canada Student Loans Programme. The adoption of Canada Student Loan criteria will in many cases extend the amount of loan which will be available to individual students. Because in the past the Nova Scotian assistance programme consisted of bursary assistance, it was necessary to apply more restrictive criteria in order to ensure that as many people as possible were being assisted with the available amount of funds. With a loan plan, easing the criteria to harmonize with those of the Canada Student Loans Programme seems acceptable and justifiable.

Financing Basic Research and Development

In Chapter 2, three types of research are defined and described: scholarship, basic research, and development. Basic research and, in particular, development place a far greater demand upon university

resources than does scholarship because of the need for highly qualified support personnel, physical facilities, equipment, computing capacity, consumable supplies and administrative support. In Nova Scotia sponsored research expenditures were $22.7 million in 1983-84, or 9.5% of total university expenditures. The growth in sponsored research expenditures in the last ten years has been impressive, rising from $5.9 million in 1974-75, an increase of 285%. Table 25 provides details of funding sources in Canada and Nova Scotia and indicates the dependence upon the federal government for support of sponsored research activities in Nova Scotia.

TABLE 25
Major Funding of Sponsored Research in Universities, Nova Scotia
1983-84

	Canada	Nova Scotia
Federal Government	59.6%	82.2%
Provincial Government	18.6%	2.5%
Non-Government	17.7%	11.3%
Other	4.1%	4.0%

Source: Statistics Canada, *University Finance: Trend Analysis 1974-75 to 1983-84*, Catalogue 81-260.

Because sponsored research is resource intensive and because of the significant increase in the level of activity in recent years, university administrations are being requested to provide additional budget allocations in support of research activities. In most cases the sponsored research awards from granting councils provide funds for the direct costs incurred in research, but make inadequate provision for the indirect costs, which by their very nature cannot be reasonably identified with a specific research activity. These indirect costs include utilities, employer benefits, general maintenance and administrative support.

There is growing recognition of the need to provide for the indirect costs of research. Since indirect costs are estimated to be approximately 50% of direct costs, they would have totalled about $11.3 million in Nova Scotia in 1983-84. Recently, two major reports in Canada dealing with post-secondary education and research, the Bovey Commission Report in Ontario and the Johnson Report, recommended that funding for the major granting councils in Canada should be increased in order that they in turn would be able to increase the dollar value of research awards to provide for indirect costs. The Royal Commission supports the recommendations of the Ontario Commission and Dr. Johnson in this matter and urges the province to press the federal government and the granting councils to recognize indirect costs as eligible costs in research grant awards. Until such time as indirect costs are provided for in research grants, institutional allocations of provincial

operating grants should consider and recognize the financial burden of research activities in individual universities.

The direct financial contribution by the province of Nova Scotia toward sponsored research activities in the universities is a matter of concern to this Commission. Provincial contributions in Canada towards sponsored research range from a low of 0% in Prince Edward Island to a high of 44% in Alberta, with an average of 18.6% for Canada. Details for each province are included in Table 26.

TABLE 26
Provincial Research Grants as a Percentage of Sponsored Research Income in Universities, All Provinces
1983-84

Alberta	44.0%
Quebec	23.7%
Saskatchewan	21.7%
Ontario	13.4%
British Columbia	9.8%
Manitoba	8.7%
Newfoundland	6.1%
New Brunswick	4.3%
Nova Scotia	2.5%
Prince Edward Island	0
Canada	18.6%

Source: Statistics Canada, Catalogue 81-260.

Measured on a per capita basis, Nova Scotia contributes .66¢ toward sponsored research activities, compared with an average provincial contribution of $5.51. All of the Atlantic provinces are at the lower end of the range indicated in Table 27.

There are of course research activities carried out in the province which focus on science and technology for industry through the Nova Scotia Research Foundation Corporation, which in 1983-84 expended $2,356,600 in grants and assistance. Other provinces as well have provincial corporations which carry out research activities. The Commission recommends that the government review its support for basic research and development activities through all existing agencies and departments of government in the province with a view to formulation of a policy in this area.

Private Sector Funding

During the last several years, many Nova Scotian universities have been active in developing private sector financial support. Major capital fund-raising campaigns and annual alumni campaigns are the most common

TABLE 27
Provincial Research Grants Per Capita for Sponsored Research in Universities, All Provinces 1983-84

Alberta	$15.69
Quebec	6.84
Saskatchewan	4.61
Ontario	4.52
Manitoba	2.89
British Columbia	2.21
Newfoundland	1.44
New Brunswick	.72
Nova Scotia	.66
Prince Edward Island	0
Canada	5.51

Source: Statistics Canada, Catalogue 81-260.

method of soliciting support from alumni, individuals, business enterprises and foundations. Increasing recognition of the importance of well planned and organized campaigns has produced significantly improved results, the benefits of which are reflected in improved capital assets and expanded endowment portfolios.

The Commission is very aware of the advantages which accrue to institutions which are able to attract and maintain regular sources of non-government income. The greatest benefit is the independence and flexibility of action which private income sources provide when dependence upon government is reduced. Additional sources of income can make the difference at the margin in striving for quality and excellence. In the future, because of constraints on public funding, it will become increasingly necessary to raise private source income in order to demonstrate to government the equity support which exists for particular new programmes, research activities and capital projects.

Private sector support is currently a minor source of income and every effort should be made to increase its percentage share. Even a doubling of income from this source would produce a very modest increase in overall revenues. Nonetheless, the revenues would be incremental and doubtless there would be many demands for their use.

The Commission applauds and encourages the individual efforts of all persons, campaign workers and donors alike, who on behalf of their universities are striving to develop private sector sources of funding. All contributions will help to alleviate the burden upon each institution to properly finance its many activities in the areas of teaching, research and community service.

Recommendations

The Commission recommends that:

- **Provincial government increases in post-secondary financing should be harmonized with increases in federal EPF tranfers for post-secondary education.**

- **The Nova Scotian university system should be provided with operating grants which, when measured on a per FTE student basis, would be at a level equal to the Canadian average.**

  (a) It is the responsibility of the Government of Nova Scotia to provide that portion of the university system's total operating grant that would

    (i) cover the costs of educating all Nova Scotian students attending university in Canada, and

    (ii) cover the costs of educating a fair share of students from other provinces in Canada and from other countries of the world. The Nova Scotian share of other Canadian students is composed of the number of students who are accepted on a one-for-one exchange for Nova Scotian students enrolled in other Canadian provinces, plus that number of other Canadians resident in the Territories and outside Canada that would be appropriate to a province whose population is of Nova Scotia's size.

  (b) Other provincial governments should provide that portion of the total operating grant that covers the costs of educating students from their jurisdictions whose numbers raise Nova Scotian university enrolments beyond levels appropriate to a province whose population is of Nova Scotia's size.

  (c) The Government of Nova Scotia should request the Government of Canada to provide, as part of its foreign aid programme, that portion of the total operating grant that covers the costs of educating that number of non-Canadian students considered to be in excess of the number appropriate to a province whose population is of Nova Scotia's size.

(d) If the requested transfers from other governments are denied, the enrolment of out-of-province students should be restricted to levels appropriate to a province whose population is of Nova Scotia's size.

- Any future method of allocating operating grants to the university system should include a non-formula discretionary component that is allocated on the basis of system needs and priorities to effect beneficial change in the system.

- Universities should be required to commit themselves to detailed planning covering a three-year period.

- The Government of Nova Scotia should make available to the university system general indications of level of financial support for two years into the future.

- Detailed allocations of operating grants should be announced three to six months before the beginning of the institutions' fiscal year.

- In situations where the allocation formula has proven to have caused inequities, a much more expeditious method of assigning equalization grants should be adopted to correct recognized inequities.

- Allocation of monies by means of restricted funds should be continued and, if possible, increased.

- Tuition fees should increase so that students, as the primary beneficiaries of their university education, assume 50% of the costs of their instruction.

- Foreign students should pay the full instructional costs associated with their programme, except for students from the countries defined by OECD as the twenty-five least developed nations.

- The universities should introduce differential fees that reflect major differences in programme costs. A differential fee structure based on the following classifications is suggested:

    - Arts and Commerce
    - Science and Engineering
    - Medical/Clinical
    - Professional Programmes
    - Graduate Programmes

- The Government of Nova Scotia should adopt a policy that will ensure that no student with the requisite ability and attainments will be deprived of the opportunity to find a place in a programme of study in an institution in the province, though not necessarily in the programme or institution of first choice.

- **The Government of Nova Scotia should introduce an Educational Opportunity Fund, created by statute and financed by the government, which would provide assistance in the form of loans to students in approved post-secondary educational programmes who demonstrated a need for financial assistance.**

- **The Educational Opportunity Fund should replace the Nova Scotia Bursary Programme as a supplement to the financial assistance provided by the Canada Student Loans Programme.**

- **Student loan assistance obtained under the Educational Opportunity Fund should be repayable contingent upon, and according to a schedule directly related to, the recipient's ability to pay after having completed his or her education.**

- **The amounts of defaulting loans should be repaid from provincial government revenues as a subsidy to the Educational Opportunity Fund.**

- **The criteria used for the Educational Opportunity Fund in assessing needs should be consistent with the criteria in use for the Canada Student Loans Programme.**

- **The Government of Nova Scotia should request the Federal Government and the federal granting councils to recognize indirect costs as eligible costs in research grant awards.**

- **The Government of Nova Scotia should review its support for basic research and development activities through all existing agencies and departments of government in the province with a view to formulation of a policy in this area.**

- **Universities should strive to develop private sector sources of funding.**

Chapter Four

Universities: Coordination

With the growth of government support of post-secondary education, a new relationship between the universities and the government has developed. Universities are now dependent upon government for their existence. Inescapably, this circumstance creates new relationships and new tensions that cannot be ignored in any consideration of post-secondary education. Universities claim that their autonomy is threatened by government intervention in their affairs, but — apart from quotas in medical programmes — there is little evidence that government has intervened in the affairs of the universities even to the extent that religious bodies, sponsoring agencies or grant-awarding foundations intervened in the past.

The Commission recognizes that the protection and encouragement of institutional self-governance is important to free scholarship. Institutional autonomy therefore must be preserved. However, this autonomy should be in areas of activity mutually agreed upon by the universities and such public authorities as may be concerned with post-secondary education. On the other hand, as was noted by the Graham Commission ten years ago, the universities should be accountable to the public for their use of public funds. Accountability is more necessary than ever in a time of restricted economic growth and consequently of constraint in the funding that may be made available to the universities, particularly when fixed costs are expected to remain high while student enrolment declines. The Commission foresees a continued need for an intermediary body that will preserve university autonomy and encourage academic excellence while promoting accountability and improved resource allocation on the part of the universities. The Commission also foresees that a successful response by the universities to the problem of maintaining quality in the face of constrained funding and reduced enrolment will require an intensification of the spirit of inter-institutional cooperation that now prevails.

The Problem Stated

The 1960s and the 1970s were halcyon days for Nova Scotian universities as student numbers steadily grew and government funded extensive capital projects and increased operational grants to the point where many new

faculty could be hired and new programmes developed. Responding to a widespread, if vaguely defined, public belief that a university education was a passport to economic advancement, in many cases our universities departed from their traditional roles and initiated new occupational programmes. There is, however, little evidence that either government or organized public opinion at any time exerted pressure upon the Nova Scotian universities to initiate specific programmes. The new programmes were put in place on the initiative of the universities who responded to a demand that may never have existed, and were encouraged by large increases in funding from government. Universities expanded into non-traditional areas, some of benefit to society and the academic community, some of dubious worth.

Meanwhile, course offerings proliferated and coherent subjects, academic or occupational, traditional or not, were divided and subdivided into smaller and increasingly specialized studies at the undergraduate level. The introduction of half-courses or semester courses in the American style reinforced this tendency towards specialization and contributed to the proliferation of classes attended by less than five students. These small sections add materially to the cost of university education, but during the period in question there was little concern for the financial consequences of academic decisions.

From the establishment of the University Grants Committee in 1963 until the 1970s the Graham Commission reported there was indeed a severe lack of academic coordination and academic planning in Nova Scotia. With the establishment of the Maritime Provinces Higher Education Commission in 1974, some attempt was made in the direction of coordination, but generally speaking, the expansion of programmes and the development of overspecialization continued unchecked.

In 1985, however, the days of boom are over. Demographic patterns have changed, and there is no longer an unlimited pool of youth for the universities to draw on as undergraduates. Population growth has slowed; and it is projected that university enrolment will reach a plateau and begin declining. It is expected that over the next decade the enrolment in our universities will decline substantially not only for demographic reasons but also because increasing numbers of high school graduates will probably move to Nova Scotia's non-university post-secondary education facilities as new technical and vocational programmes develop. In the 1960s and 1970s money was forthcoming from government in unprecedented measure for the expansion of university physical plant, for the expansion of university faculty, for the expansion of university programmes and for the increase in salary of university staff. Signs are not wanting — and have not been wanting for some time — that financial resources are more constrained. The evidence of annual deficit in both federal and provincial annual accounts makes it clear that in the future all university resources will have to be carefully husbanded and managed if our universities are to function at a level of excellence.

Robert Berdahl, a well informed and highly respected commentator on university government and university/government relationships in North America, has declared of the current situation that, given the financial realities of the present day, it is unlikely that there will be any future real increase in support from either level of government to the universities. It is, therefore, necessary to maintain the present level of academic programmes on a system basis by what he calls 'the process of selective retrenchment as against the more politically palatable one of "even cuts for all".' Selective retrenchment is particularly necessary in Nova Scotia given the dispersal of its limited resources amongst so many post-secondary institutions. In the Nova Scotian situation, 'even cuts for all' would be almost certain to fulfil Berdahl's prophecy that 'yielding equal bits and pieces from each participant is the surest formula . . . . for ultimate mediocrity.'[1]

It is in any case becoming increasingly difficult for any one university in these days of expanding knowledge to carry out comprehensive programmes in all areas of knowledge. Commenting on this development, the University Grants Committee of Great Britain has stated,[2]

> Broadly speaking, the university system should maintain a presence in every branch of knowledge and that presence should be of international standard. This is true alike in the humanities and in the sciences — both in potentially wealth-creating subjects and in those whose justification is primarily cultural.
>
> But what is valid for the system as a whole need not be valid for any of its individual components. It used to be accepted that each university, or at any rate, each major university, should cover all important branches of knowledge. But knowledge has vastly increased in the last thirty years, both by the appearance of new subjects and by advances in traditional ones. At the same time, individual academics have tended to specialize more than they used to do, both in their research and in their teaching. Comprehensive coverage for research has become impossible for any university, probably even for [the University of] London. Comprehensive coverage for teaching has, in many cases, led universities to spread their resources too thinly.

On the subject of rationalization, the University Grants Committee goes on to say,

> every university will have to accept that there is a choice to be made between covering many subjects patchily and covering fewer subjects adequately. If a university feels it must retain all those subjects which it has supported in the past, then it will have no room to take on the new subjects which are likely to be growth-points of the future. It must create, both in student numbers and in finance, scope to develop new subjects and new

areas within subjects. This can be done only at the expense of areas whose relative importance is decreasing.

Responses to the Problem

The greatest challenge to Nova Scotia's universities today is that of finding a working response to constrained funding, new patterns of enrolment and, generally, to changing circumstances. This has already resulted in some efforts by the universities to look at ways in which they can cooperate to mutual advantage so as to reduce expenditures and rationalize programmes. The results to date, while perhaps tentative, have been encouraging. Some progress has been made in developing cooperative programmes in the field of purchasing and supply amongst the Halifax universities. Many Nova Scotian universities participate in an insurance plan for buildings and grounds. The existence of the Dalhousie/Mount Saint Vincent summer school is another example of a cooperative initiative. The agreement between the universities whereby Acadia University's School of Education assumes a special responsibility for special education while Mount Saint Vincent University specializes in early childhood and reading programmes is another indication of how specialist programmes can be assigned in such a way as to concentrate specialization in individual institutions. In the Halifax area, the metropolitan universities have made marginal progress in examining the possibility of cooperation and coordination in teacher education programmes. Saint Mary's University and Dalhousie University's limited exchange of course credits and cross listing in selected programmes is an example of the fact that the universities themselves have already realized the need for cooperation and coordination. The degree of cooperation in certain areas between the Nova Scotia College of Art and Design and other local institutions again is an indication that the universities are aware of the need for cooperation and deserve encouragement in furthering these programmes.

The Commission feels that these cooperative efforts, in addition to others that have taken place, are to be commended. More importantly, the Commissioners sense that these efforts contain within themselves a logic that points to a system of cooperation and coordination that will permit the development of programmes wherein the dispersed resources of the Nova Scotian universities may be marshalled in such a way as to increase undergraduate academic standards and greatly strengthen graduate programmes through an integration of academic resource. Such a tendency has the Commissioners' full support, for prolonged reflection on the problems of post-secondary education in this province has led us to the view that a more comprehensive approach to coordination and cooperation will have to be taken and that the lead in the area of academic cooperation already

pioneered by the universities in Nova Scotia will have to be greatly accelerated.

The Commission believes that the universities of Nova Scotia have to be regarded as a system. In essence, this has been the case ever since the University Grants Committee was formed in 1963, and it is clear that the Maritime Provinces Higher Education Commission regards the universities of the region from a system point of view. The Commissioners are of the view that there is a need within the Nova Scotia university community for a much higher level of coordination and cooperation. The Commission also agrees with Robert Berdahl that a 'selective retrenchment' on a system basis is necessary in Nova Scotia. This will necessarily involve changes at both the system and at the individual institutional level.

There are three possible approaches to organizing Nova Scotian universities on a system basis so as to respond to the problems of funding constraint and declining enrolments while maintaining or improving the standard of academic quality. The first is the current method of voluntary cooperation. Here the impetus towards cooperation comes from the universities themselves, with encouragement from the MPHEC as an intermediary body with an advisory function. The second approach is that of university consolidation: a centrally administered University of Nova Scotia, which would absorb the present universities and colleges as constituent campuses. The third approach is the coordination of the activities of the institutions through an intermediary body with executive powers.

Before considering the advantages and disadvantages of these three approaches, it seems appropriate to make clear the sort of responses on a system basis that the Commission believes are necessary if the universities of this province are to meet the challenges of the present and those of the next two decades.

The Commission foresees that two limiting conditions must inevitably define and shape the development of Nova Scotian universities between now and the end of the century. One is the prospect of continued restriction of government funding; the other is the likelihood of decline in enrolments.

In a period of financial constraint, there must be a means of ensuring that the resources available for the universities are employed in the most cost-effective ways possible. Applied to academic functions, cost-effectiveness must be judged by the quality of academic performance per unit of financial resource. The objective must be teaching and research to standards of excellence; and the question confronting all those entrusted with financial management of the universities must be how best to spend the available funds to ensure that teaching and research in as many programmes as possible within the university system as a whole reach that high level of quality. To ensure that quality does not remain merely an unrealized ideal, there should be some method of providing financial incentives to those institutions which do successfully achieve cost-effectiveness. There must also be means of suggesting projects leading to greater cost-effectiveness to

individual universities; means of preventing or redressing programmes that are cost-ineffective; and means of evaluating each university's performance by comparison with other institutions.

Cost-effectiveness derives mainly from appropriate allocation of resources, and here the system response to constrained funding is similar to the response to declining enrolments. The system response necessary to confront the probable contraction of student enrolments must be the ability to reallocate resources both on an intra-university and an inter-university basis. It must be possible to reallocate resources from a programme with declining enrolments toward other programmes in the same institution. It must also be possible to reallocate resources from a declining programme in one institution toward a similar programme at another institution so as to consolidate resource and strengthen offerings in that programme within the universities of the province regarded as a system.

Clearly, decisions concerning cost-effectiveness and resource allocation cannot be taken on a haphazard basis. Priorities must be established and academic planning undertaken for the system of Nova Scotian universities, as well as for the individual universities themselves.

Academic planning has received little emphasis in universities, not only in Nova Scotia but also elsewhere. The Graham Commission (III, 63-14) noted that while detailed planning of capital facilities and forecasting enrolments were reasonably well done, questions such as whether a capital facility should be constructed, what the full implications of its construction were, and on what academic assumptions enrolment should be forecast were not so well considered. In other words, short-term planning, especially of an administrative nature, was conducted well, but medium-term and long-term planning, especially of an academic nature, were neglected. The present Commission believes that little has changed in this regard over the past decade, and the Commissioners were surprised that the public briefs from individual institutions (unlike the one from the Students' Union) did not give planning a higher priority in their discussions of concerns.

Yet without a frame of reference against which to assess the needs for the introduction or continuation of academic programmes, for the support of certain forms of research or for facilities of a specialized type, the university easily falls into excess expenditures and a general malaise arising from the lack of a sense of purpose.

What is true of the individual institutions is true of the system of universities as well, and perhaps even more so, for the plans and priorities of each university must be adjusted to the amount of funding the province is able to provide, without decline in academic standards. This can occur only if plans and priorities exist for the system as a whole. It is important to note that the priorities of the individual institutions may well differ from those of a provincial system, and in this case the Commission believes that the priorities of the system must prevail.

For instance, an institution that currently offered a two-year certificate

programme in a subject might wish to offer a full baccalaureate in that subject. Viewed from the perspective of the individual institution, this is certainly a legitimate aspiration of any university. Viewed from the perspective of the provincial system, however, the costs might well be prohibitive, for courses in the third and fourth years entail the highest expenditures for the lowest enrolments. Thus in terms of resource allocation for the system as a whole, expenditures at that institution to duplicate programmes already taught elsewhere could not be justified. The Commission foresees that, to maintain a system approach to programme delivery, the concept of 'two years, then transfer', already successfully applied in engineering programmes, may have a place in other programmes at all institutions.

In sum, if the Nova Scotian universities are to confront and overcome their present challenges, the Commission believes the following responses are required. To survive and excel in a period of financial constraint, there must be a means of promoting cost-effectiveness. To respond to a contracting student population, there must be efficient means of reallocating resources, human, physical and financial, within each university and between the universities. To ensure that decisions regarding cost-effectiveness and reallocation of resources are undertaken consistently with a view to maintaining the highest possible academic standards, serious planning must be undertaken by the individual institutions and an overall plan for the system of universities must be drawn up. Crucial to effective planning is the establishment of priorities and the determination of what programmes are central to each university's mission as a member of the Nova Scotian system.

System Responses Assessed

(a) Voluntary Cooperation and MPHEC

The Commission has grave doubts whether the Nova Scotian universities as they are currently organized under MPHEC are able to undertake the system responses outlined above.

(i) Lack of Programme Review

There must be some uncertainty at least that a system with the degree of duplication of departments in the same fields that is evidenced by Tables 3 and 4 in Chapter 1 is employing its resources in the best way possible. Commission studies have also revealed a significant spread in costs in various programmes at different universities. In five biology departments, for instance, costs per course registration ranged from $534 to $1,080, translating into a range of $2,670 to $5,400 per full-time-equivalent student taught. It may be added that the two universities with the highest costs also offered the largest number of full and half courses at the 300 and 400 level with enrolments of less than 5, and with enrolments of less than 10,

TABLE 1
Advanced Undergraduate Courses with Low Enrolments
in Nova Scotian Universities
1 December 1983

Subject Area	No. of Univs. In Sample	No. of 300, 400, Level Courses With Enrolments of Less Than 5	Less Than 10
Biology	5	29	44
Chemistry	5	20	29
Education	5	24	40.5
English	5	14	24
History	5	22.5	48
Mathematics	4	14.5	20.5
Psychology	4	15.5	30.5
Sociology	4	19	37
Total		158.5	273.5

Number of half-courses was divided by 2 to convert to full-course equivalents recorded above.

Sample varies, but includes:
Acadia
Dalhousie
Mount Saint Vincent
Saint Francis Xavier
Saint Mary's

Source: Enrolment and course information provided by universities.

students. Table 1 indicates the number of advanced courses in various disciplines at four or five universities. As can be seen, there are 158.5 full-course equivalents in each of which less than five students are enrolled. Assuming that a single professor teaches three full-course equivalents, the figure of 158.5 represents a faculty complement of some 53. There are in all 273.5 courses with an enrolment of less than 10, that is, the course load usually taught by 91 professors. Assuming an average salary of $42,000, there is consequently an investment of at least $2.2 to $3.8 million annually in these courses.

This is not to say that duplication in all cases represents an inefficient use of resources. In many subjects a degree of duplication may well be necessary to stimulate exchange of ideas and encourage healthy competition for excellence. Many of the courses taken by less than five or ten students may be necessary to an understanding of the subject. The Commission does feel, however, that the situation requires close analysis, on a subject-by-subject basis, across the university system. Such analysis would preferably be undertaken by committees of academics in the discipline under study. The nature of the duplication and the actual necessity of under-subscribed courses at the undergraduate level should be among the topics considered. Where such committees find that duplication or course proliferation is leading to inefficient use of resources in a way that harms quality of instruction and research in the system as a whole, there should be some mechanism whereby the system can make the necessary adjustments. Adjustments would conceivably entail closing certain programmes at certain

institutions and transferring their resources, so far as is practicable, to strengthen programmes at other institutions. By studying several programmes at once, decisions to reallocate resources could be made on a quid pro quo basis. Thus transfer of resources among institutions could compensate an institution for the closure of weaker programmes by providing further resources for programmes at that institution that were recognized throughout the system for their excellence. Retention of all existing programmes at all the universities has little justification for, as Berdahl has noted, 'One cannot pretend that all academic programs in all institutions are of equal value to the province and to the world.'[3]

Such a procedure of programme evaluation and the authority to transfer and reallocate resources do not currently exist. Despite an atmosphere of institutional cooperation, it is unlikely that institutional loyalties would actually permit any great degree of rationalization, particularly when there was the possibility of closing weaker programmes long associated with a particular institution. Moreover, adjustments which would require transfer or termination of tenured staff pose a particular problem.

These deficiencies in the system of voluntary cooperation have prevented the universities from making the necessary responses to instances of declining enrolments and, in occupational programmes, to changing demands in the job market.

(ii) The Case of Teacher Training

A case in point is teacher training. There is, to be sure, legitimate doubt whether the educational system produces a surplus of teachers. In 1977, 1,127 teachers graduated from Nova Scotian institutions, but by 1984, that number had fallen to 587, in response to declining enrolments and demand for teachers in the province's schools. Projections of school enrolments and of demand for teachers over the next decade suggest that a graduating class of 500 will be adequate to satisfy the demand. (It should be remembered, however, that there is already a substantial number of teachers seeking employment. During the 1983-84 school year, the Department of Education indicates that there were 2,350 teachers in the pool, that is, teachers who had substituted for at least one day during the period. And in January, 1985, some 1,215 teachers were registered as active unemployment insurance claimants.)

On the other hand, if the size of graduating classes has been adjusted to meet the demands of reality, in some cases by a quota system, the same cannot be said of the teacher training system itself. Teachers continue to be taught in no less than eight institutions: Acadia, Dalhousie, Mount Saint Vincent, the College of Art and Design, the Teachers College, Saint Francis Xavier, Saint Mary's and Sainte-Anne. While part-time faculty have been cut back between 1976-77 and 1983-84, the number of full-time faculty remains high. As can be seen in Table 2, in 1976-77, some 99.75 FTE faculty taught a class from which 1,127 students graduated. At that time, the graduate-to-

TABLE 2
FTE Faculty in Education Departments and B.Ed. and A.Ed. Graduates from Nova Scotian Institutions 1976-77 and 1983-84

Institution	1976-1977 Graduates	1976-1977 FTE Faculty	1976-1977 Graduates / FTE Faculty	1983-1984 Graduates	1983-1984 FTE Faculty	1983-1984 Graduates / FTE Faculty
Acadia	190	14.5	13.1	130	13.8	9.4
Dalhousie	262	28.7	9.1	81	18.4	4.4
Mt.St.Vincent	133	8.0	16.6	90	10.5	8.6
NSCAD	14	5.0	2.8	6	5.0	1.2
St.Francis Xavier	188	10.0[a]	18.8	102	10.0[b]	10.2
St. Mary's	145	12.7	11.4	74	9.0	8.2
Ste.-Anne	1	2.3	0.4	5	3.0	1.7
Subtotal	933	81.2	11.5	488	69.7	7.0
NSTC	194	55.8	—	99	35.0	—
(Adjusted for 3-year programme)	194	18.6[c]	10.4	99	11.7[c]	8.5
Total (with NSTC adjusted)	1,127	99.8	11.3	587	81.4	7.2

Notes

a. Part-time figures for 1976-77 unobtainable.
b. 1984-85 figure.
c. FTE Faculty figure divided by 3, since only one-third of the faculty might be expected to teach the graduating class of a three-year programme.

Observations

1. Full-time equivalents of part-time faculty are those provided by the institutions concerned; where no FTE was provided, the FTE was calculated on the assumption that each full-time faculty member is responsible for 3 courses (except at NSTC).
2. FTE of part-time at NSTC was calculated by an extension of NSTC's own method, which assigns 1 count for those teaching seven or more hours per week, .5 count for those teaching six hours per week. Part-time at NSTC involves teaching 3 hours per week, and therefore is assigned a .25 count in this table.
3. Graduate numbers, rather than total enrolments, are employed to obviate problems caused by different lengths and types of B.Ed. course in the universities.

Sources: Graduate numbers: N.S. Department of Education.
Faculty numbers: Institutional responses to study undertaken for the Royal Commission by Dr. M. MacMillan, Chairman, Committee of Education Deans and Heads, Halifax Metro Area;
Numbers for St. Francis Xavier, 1976-77: Working Group of Representatives of Fourteen Maritime Institutions offering Degree Programmes, 'Teacher Education in the Maritime Provinces', brief submitted to MPHEC, January, 1977

faculty ratio was as 11.3:1. (Graduate rather than total enrolment figures are used to obviate difficulties caused by variations in type and length of B.Ed. courses. The normal length of a B.Ed. course is assumed to be one year, and figures for the three-year A.Ed. programme at the Teachers College have had to be adjusted to permit meaningful comparisons.)

Between 1977 and 1984, the number of graduates fell from 1,127 to 587, or 47.9%. FTE faculty figures did not, however, decline commensurably. While FTE faculty figures did decline, from 99.75 to 81.4, this represents a decrease of only 18.4%. By 1984, the graduate-to-faculty ratio was only as 7.2:1.

When numbers of faculty fall only 18.4% in a period during which graduate numbers fall 47.9%, when the faculty:graduate ratio falls as low as 1:7.2 and yet a subject continues to be taught in eight distinct institutions, it is evident that the time has come to contemplate reallocation of resource and consolidation of programmes in that subject in a smaller number of institutions. During the hearings, however, only the Teachers College seemed prepared to consider the need for coordination and the reallocation of resource. All the other institutions either ignored the existence of the problem or else defended the status quo by claiming that their departments of education 'specialized' in some form of teacher training — specialties which are not studied by the majority of teachers graduating from the institutions in question. Since April, 1982, the efforts of Dalhousie, St. Mary's, NSCAD and Mount St. Vincent's departments of education as a consequence of the Committee of Heads and Deans of Education represent the first steps toward cooperation and rationalization. It is the opinion of the Commissioners, however, that much more can be, and should have been, achieved. What would seem to be lacking is an incentive to do so.

(iii) Problems of an Advisory Body

Part of the problem seems to lie in the advisory nature and general operational procedure of the existing intermediary body, MPHEC. By its terms of reference, its primary function is 'to advise the Council [of Maritime Premiers] with respect to existing needs in the field of higher education in the region.' While the MPHEC is entrusted with planning functions and with the encouragement and facilitation of cooperative arrangements and regional centres of specialization, its lack of autonomous executive authority would seem to have impeded it from undertaking effective action in these areas.

As an advisory body without executive power supported by discretionary financial powers, it has lacked the authority to carry out effective programme review within the university system. (A sample programme evaluation project has been established this year (ten years after MPHEC was founded) but responsibility for the review has been delegated to the individual universities.) On the other hand, the lack of information that could be derived from programme review has hampered MPHEC's task of explaining the universities' legitimate financial needs to government.

Without a thoroughgoing assessment of whether programmes have been delivered in the most cost-effective way compatible with academic excellence, the data to support requests for further government funding are not available and governments are skeptical that existing funding resources are being used in the most effective, efficient and economical manner.

MPHEC's difficulties may well have been wished upon it by the two groups whom it serves as an intermediary. Its inability to elaborate an overall plan for post-secondary education probably derives from its position as an advisory body to three distinct provincial governments, each with its own distinct educational priorities. Except for a few subjects, such as forestry and medicine, it is hard to conceive of the universities of the three Maritime provinces as a clearly defined system for which plans can be made, and it is unlikely that the three provincial governments conceive of the universities in this way. It will be remembered that the chairmen of the three provincial grants committees foresaw the difficulties inherent in planning by a tri-provincial intermediary body.

If there is a division of ultimate educational responsibility on the part of government, there would seem to have been a reluctance on the part of academic representatives to MPHEC to assume responsibility for taking hard academic decisions. MPHEC's board consists of five representatives from the private sector, five from the public service and five academics, with all three Maritime provinces represented. The two key operating committees, however, are the Programme and Finance Committees, staffed jointly by MPHEC and the Association of Atlantic Universities (AAU). Until very recently, these have been composed of three academic appointees from MPHEC and three AAU academic appointees. Since there has been no counterbalance to the purely academic viewpoint, and no clear directive that MPHEC adopt an executive position on academic matters, these committees have tended to support positions that will be generally acceptable to the academic community. MPHEC has, for instance, proven much more active in approving new programmes than in the evaluation and the reduction or termination of existing programmes. The universities' position, as espoused by the academic representatives, and stated to the Commission, is that voluntary cooperation overseen by MPHEC is sufficient to make any adjustments necessary. Unfortunately, as Robert Berdahl points out,[4]

> comparative experience suggests (without proving) that voluntary cooperation normally is unable to take the tough decisions because it usually operates on a principle of near unanimity, and vigorous objection from a party feeling threatened is usually enough to freeze its forward progress.

An advisory intermediary body reporting to three separate provincial governments, therefore, does not appear to be a promising mechanism for promoting a system response to the problems of financial constraint and the prospect of decline in enrolment. Its planning and procedures have not

received general approval. And, while its statistical data on enrolments, personnel and programmes are second to none, the absence of data arising from programme reviews tends to make the positions of the universities and government less easily comprehensible to the two parties concerned. Government cannot easily understand or assess the legitimate needs of the universities; the universities are at a loss to comprehend the funding advice given by MPHEC to government. As NSCUFA recently concluded, 'MPHEC has not, through the quality of its reports and recommendations, achieved the confidence it needs to be a determining factor in influencing both government and the universities.' It has not become what NSCUFA would desire: 'a strong intermediary body between the universities and government.'[5] The Commission believes that by its very nature any advisory body depending on voluntary cooperation from the universities cannot provide a strong response to the present and future problems of higher education or act as a strong intermediary between the universities and government.

(b) Consolidation: A University of Nova Scotia

A University of Nova Scotia, of which all the existing institutions would form campuses, has much to recommend it. Such a university, with a provincial board of regents, a centralized administration and a central academic senate, on the pattern of the University of California, would by definition be enabled to undertake a system response to the challenges now confronting higher education in this province. Academic priorities could be established, and planning undertaken, for the system as a whole through a body similar to California's joint administrative-senate Academic Planning and Program Review Board. Since the central administration would be responsible for administering the disbursal of funds provided by the government for higher education, it could easily reallocate resources to cope with declining student enrolments and to consolidate programmes recommended for rationalization by the review board.

A University of Nova Scotia could exist under MPHEC, cooperating in regional programmes. The Commission is somewhat hesitant concerning the advisability of this arrangement, however, because of a lingering doubt whether a purely advisory body could exert the necessary influence on a large University of Nova Scotia whose administration refused to take planning and resource allocation seriously or else administered the system inefficiently. A purely provincial intermediary body that could relate the concerns and educational objectives of the Nova Scotian government directly to the provincial university, ensure that proper university planning and administration occurred, and relay the concerns of the university directly to the government would be a more effective agency because of its immediate concern with matters purely Nova Scotian. (It may be noted that Oregon and California, both of which have multi-campus state university systems, both have state commissions and boards that act as intermediaries between

government and university and which establish goals and objectives for post-secondary education or for education as a whole in the state.) A link could be maintained with a regional body to make use of a common data base and to ensure continuing cooperation in programmes that had a regional enrolment.

On the other hand, a University of Nova Scotia, unless established (as was the University of California) by the desire of the constituent institutions, would savour too much of an artificial, unitary, creation that ran counter to the individualistic traditions of the universities of this province. There certainly does not seem to be any widespread desire for a consolidated university. The Commission received no briefs recommending a University of Nova Scotia, nor was the matter raised during the public hearings. This is not, perhaps, surprising, for each of our universities has a strong individual character closely linked to the local culture of the surrounding community. The universities and their traditions thus frequently evoke strong loyalties on the part of students, alumni and faculty, who do not wish to see their particular institution submerged in a larger entity.

There are, furthermore, definite academic benefits to the preservation of institutional distinctions. As a start, each university now has certain unique disciplinary strengths and areas of interest. Where similar programmes are developed and delivered in several universities, competition between different departments provides an intellectual stimulus; and the existence of nearby colleagues can lead to fruitful collaboration. While the Commission believes that the availability of resources must be the limit to duplication of programmes, it also recognizes that the intellectual and academic life of the province is enhanced when similar programmes are presented from various points of view.

Whether these benefits could be preserved in a consolidated university is dubious, for there is a danger of intellectual uniformity where all programmes are developed by a central authority. As Berdahl has concluded from his study of consolidated university systems, such systems have a tendency to 'too much accountability and too little autonomy'. This is not to say that a multi-campus consolidated system cannot provide diversity of programme development and delivery, but that such a goal is more easily achieved in a more loosely associated system.

For, as Berdahl has also observed of consolidated systems, they 'often exhibit excessive centralization of powers and frequently preoccupation with governance at the expense of careful planning and coordination'.[6] Preoccupation with governance is almost unavoidable owing to the size of the bureaucracy required to govern a consolidated university system: a central administration of president and vice-presidents, a central senate, central university officers and the staff necessary to serve such an establishment are added to the existing university administrations, senates, officers and staff. What such a large organization gains in completeness, it may well lose in flexibility and the ability to deal rapidly with problems as they arise.

Doubtless some savings could be obtained through the centralization of administrative functions, but the information available to the Commission does not suggest that economies of scale are readily obtainable in academic institutions. A recent study by Howard R. Bowen on the costs of higher education concluded that,[7]

> institutional size and unit cost are not closely related in any rigid or mechanical fashion. It is possible to conduct higher education in many ways. Institutions of the same size operate at quite different unit costs, and institutions of quite different size operate at the same cost . . . The possibilities for cost variation from adjusting the mode of operation greatly overshadow the effects of institutional size on cost.

In any case, the primary consideration in any university system must be academic quality in terms of high standards, intellectual stimulation and development, and unique educational experience. Where financial objectives are concerned at all, the objective must be cost-effectiveness, that is, the provision of the highest quality of education possible for the level of resource available, rather than the provision of education for the lowest cost possible. High standards are not automatically associated with larger institutions and indeed, as Bowen observes, 'on grounds of educational quality, it may be desirable to err on the side of smallness.' The continued existence of the present institutions with greater coordination of their programme offerings would seem to be the best way of maintaining the qualitative features of Nova Scotian university education that the Commission wishes to preserve: high standards, diversity of academic points of view, and individual university traditions and quality of life.

After due consideration, therefore, the Commission feels it cannot recommend in favour of the creation of a University of Nova Scotia. If, however, other means of coordinating university administration function poorly, the Commission believes the government should retain the consolidation of the universities into one large provincial institution as a definite option.

(c) Coordination: A Council on Higher Education

From the foregoing discussion of the strengths and weaknesses of cooperation and consolidation as means of providing system responses to the challenges now confronting Nova Scotia's universities has emerged a picture of the most desirable means of gaining that end. There should be a strong and effective coordinating agency, which would at the same time not add another layer of bureaucracy of considerable size and far-reaching powers to the universities. Evidently an intermediary body is to be preferred to a central administration of a University of Nova Scotia. At the same time, the intermediary body should assume an active role in promoting coordination, with the power to compel rationalization to occur, rather than rely solely on

voluntary cooperation between the universities. While maintenance of a link with a regional body would be advisable for access to its data base and to negotiate participation of the Nova Scotian system in programmes of regional importance, a provincial, rather than a regional, intermediary body seems preferable, because of the more immediate contact between government and universities for purposes of planning and funding.

The Commission therefore recommends the creation of a provincial body to mediate between the government and universities of Nova Scotia. It proposes that this intermediary body might be suitably named the Nova Scotia Council on Higher Education. While the Council should advise the government on the level of funding required by the universities and also on matters relating to university education, it should not be a purely advisory body. It should enjoy executive authority, and retain discretionary powers over funding, in order to ensure that planning, programming and resource allocation are carried out within the context of a provincial system.

Although it should be strongly influential with, and appointed by, government, the Council should be more autonomous than the current MPHEC. Once the Council is established, the Commission believes that government decisions to accept, adopt or approve would be required only in the following areas:

- provincial policies, at the highest level, with respect to university education. These policies would originally be developed by the Council, and should be approved, amended or rejected by government only after consultation with the Council.

- level of resource available to be provided to higher education. While the Council will advise government concerning the level of funding the universities require, ultimate funding decisions must remain with government, which has other social and economic priorities to take into account.

- continuation of the Council's mandate with respect to higher education.

On the other hand, the Council must respect the autonomy of the universities and academic freedom of the faculty. This means that ultimate decisions in certain matters must be left to the universities themselves. These matters include:

- academic policies
- academic standards
- admission standards
- graduation standards
- selection and appointment of university staff

Without ultimate jurisdiction over these matters universities would lack the autonomy essential for the preservation of academic freedom.

The Council will be, however, an intermediary body and as such should have the right to hold the institutions accountable for their performance in the areas just mentioned. It must have the authority to ensure discussion and review of all topics related to the university system. For without adequate information on university programmes and practices, the Council would forfeit the confidence of both government and the universities. Government, because it could not perceive the rationale for the Council's funding recommendations; the universities, because the Council would not be completely aware of the academic and administrative state of affairs on each campus. If the Council functions as it should, it would retain the confidence of both of the interested parties and, furthermore, stand as a powerful advocate for the best interests of the university system in the province.

With the creation of a provincial Council, the role of the current regional intermediary body in Nova Scotian university matters will necessarily become more circumscribed. The Commission does, however, see a valuable role for a regional intermediary body or agency in two main areas. One is data collection, since the Commission considers that the cost and time needed to develop a purely provincial data base would be superfluous when a sound statistical base and data collection system already exist at MPHEC. It would be advisable for the provincial Council to negotiate an arrangement whereby the Council's secretariat could gain access to the regional intermediary's computerized data base in return for assisting the regional intermediary in maintaining a data base of information relevant to the Maritime region as a whole. The other major role for a regional intermediary is the coordination of those programmes which are offered in a university in only one of the Maritime Provinces, programmes such as medicine at Dalhousie, forestry at the University of New Brunswick and veterinary medicine in Prince Edward Island.

The Commission recognizes that while Nova Scotia's needs to be met by a regional intermediary are limited to data collection and some programme coordination, the needs of New Brunswick and Prince Edward Island may well be more extensive. The future composition and responsibilities of MPHEC (or whatever regional body is its successor) should therefore be established by negotiations between the three provinces concerned.

Composition and Responsibilities of the Council

The Commission believes that, to be effective, the Council on Higher Education should be a small but highly qualified body, ably supported by a small but highly qualified staff. Although the Council should be empowered to enquire into all matters relating to university education in the province, its

chief areas of interest and responsibility will inevitably be three: planning for the system; programme evaluation and coordination; and budgeting for the system.

(a) Composition

Everything must be done to ensure that the Council is as independent as possible from government and the university community, while retaining the trust of both parties through an extensive and sympathetic knowledge of the university system of Nova Scotia and a sound grasp of the principles and objectives of university education.

As a start, to give a clear indication of the Council's independence of the government in power, it should be created by statute, rather than by order-in-council. The statute should confer the powers of an administrative tribunal on the Council. The Council should be empowered to enquire into any and all things relating to higher education in Nova Scotia. It should be established as the financial recommending and financial granting agency of the Nova Scotia government for all matters of university education. The Council, not a section in the Department of Education, should be given the responsibility for advising the Minister of Education (in his or her capacity as Minister responsible for the Nova Scotia Council on Higher Education Act) in university matters.

The members of the Council must be chosen for their recognized ability and understanding of academic and administrative affairs. They must be chosen extremely carefully, for on their good sense and good judgement will depend decisions that affect the education of thousands of Nova Scotians. The councillors must be realistic and prepared to transmit to both universities and government, with the greatest of sensitivity, public concerns about the activities and performance of the university system. To do so, and to attend adequately to the affairs of the Council, the Chairman or Chairwoman must be full-time, and the other councillors must be able to dedicate at least four to six days a month exclusively to the Council.

Membership of the Council must be of sufficient size to permit both expression of different points of view on any subject and a reasonable degree of expedition in the settlement of conciliar affairs. An ideal size would be seven, including the Chair. There should not be a majority from either government or academe on the Council, and no more than two persons currently active in the universities and no more than two currently active in government. At least three persons would thus be chosen from the private sector. Of the seven councillors, one should be a recognized spokesman or spokeswoman for science and technology and one for the arts and humanities.

The Chair of the Council should normally be occupied by one of the non-governmental and non-academic members. Appointments to the Council would, as is usual, be by order-in-council, and should be for a limited term. To ensure continuity, however, staggered terms of appointment should be employed.

As the Council develops its policies, it will doubtless require an extensive advisory committee structure, and councillors should be of the calibre that they may assume the chairs of many of these committees. These committees should draw heavily from relevant expertise in the universities, but must also permit the expression of opinion from other sectors of the community.

The Council should be entrusted with the selection of its own Secretary and staff. The Secretary, as Chief of the Council's Secretariat, will attend meetings of the Council and supervise the execution of the Council's directives. So that the Council may be assured of the highest quality of personnel, both the Chair and the Secretary should be paid a salary commensurate with the responsibility, difficulty and importance of the task involved.

To assist the Council and the advisory committees in their deliberations, the Council will require a small but highly qualified secretariat. To attract the best qualified staff available, the Council should be permitted to dispense with Civil Service regulations in hiring its personnel. The nucleus of the staff will consist of a Head of Research and a sufficient number of researchers, excluding support personnel, to provide the Council with an extensive in-house research capacity. The duties of the research section will be to develop information systems which can supply relevant data about university and non-university sectors and to maintain a comprehensive data base.

(b) Responsibilities

The university system to be coordinated by the Council on Higher Education should consist of the following institutions:

Acadia University
Atlantic School of Theology
Dalhousie University
Mount Saint Vincent University
Nova Scotia Agricultural College
Nova Scotia College of Art and Design
Nova Scotia Teachers College
Saint Mary's University
Saint Francis Xavier University
Technical University of Nova Scotia
Université Sainte-Anne
University College of Cape Breton
University of King's College

It will be noted that the Nova Scotia Land Survey Institute, currently one of the MPHEC's scheduled institutions, is not included in this list. The Commission believes that it should be grouped with the Nova Scotia Institute of Technology and the Nova Scotia Nautical Institute as one of the three institutes of technology that provide the advanced level of occupational education in this province.

The Commission feels that the Council should continue to identify those factors critical to the maintenance of a superior system of post-secondary education. Some of these have been considered in Chapter 2 — the necessity of well-prepared students, good teaching, a sound curriculum and academic leadership. Economic and social factors influencing the accessibility to university should also be considered, as should the extent and appropriateness of research funding, the balance between basic and applied research, and the responsiveness of occupational training in the universities to manpower demands and other market forces.

The Commission does not intend, of course, that the Council should undertake all the research into these topics by itself and impose solutions upon the universities. Such procedure would be wholly contrary to the spirit of the Commission's recommendations and would, in any case, be unworkable, because the Council would be unlikely to obtain the cooperation of the universities. Without the universities' cooperation, a system response worthy of the name would be impossible. The Commission foresees that, after the establishment of the Council, it will work closely not only with the universities but also with organizations such as the Council of Nova Scotia Presidents and the Association of Atlantic Universities.

(i) Long Range Planning

One of the Council's first acts must be to initiate a broad participatory planning process, drawing on the human resources and expertise that exist in the universities and in the non-university sector. While there will be many different advisory committees and working parties dealing with many different subjects, their initial objective should be to develop a comprehensive plan for higher education in Nova Scotia. The plan, once formulated, should provide long-range perspectives on future possibilities, with coherent, feasible, reasonably specific, costed proposals for the future structure and development of higher education in the province. Decisions will have to be made by the Council, in consultation with the universities, to ensure the appropriate concentration of academic strengths through institutional specialization, and to eliminate inefficient patterns of provision of courses. Where necessary, the Council may have to set enrolment targets and limits and, following intensive consultations, may have to apply financial incentives and disincentives to ensure that the priorities of the system are realized.

The long-range plan should embody the system response to present and foreseen problems and should enjoy the general support of the universities, as indicated in consultations between the Council and academic and administrative university representatives. The Council would be well advised to secure formal support from the government for the long-range plan, for in this way the universities would gain greater assurance of the government's commitment to the direction generally agreed to be proper for higher education.

The long-range plan should include proposals for a coordinated provincial system consisting of a diverse array of institutions, each with a specific role and mission statement. As a corollary of the long-range plan, each university would be encouraged to initiate a planning process that would clarify the institution's specific role and mission within the provincial system. Planning for the university as a whole is a function of a central planning and resource allocation committee but, as the Graham Commission noted (III, 63-17),

> Effective planning requires that purposes, long-range and short-range objectives, and means (programmes) to achieve objectives be established at all levels — university, faculty, division of faculty, department and individual faculty member.

In the course of developing an academic plan each university, faculty and department would be required to assess their internal and external situations. Internally, the elements to be considered are:

(a) traditions, values and aspirations

(b) academic and financial strengths and weaknesses

(c) abilities and priorities of academic leaders

The external elements are:

(d) environmental trends

(e) student preferences

(f) competitive situation vis-à-vis similar institutions

Among the environmental trends to be considered are technological, economic, demographic, political and legal developments, as well as changes in social attitudes and life styles.[8] Ultimately, the plans for each unit in the university will be adjusted and reconciled to produce a master plan for that university's activities.

While undertaking this internal assessment, the universities should examine the potential for increased quality and efficiencies through close cooperation with other institutions in a variety of areas. The planning process is intended to make each institution more aware not only of its strengths and weaknesses, but also of its place within the Nova Scotian system. In formulating its institutional plan, therefore, each university should ensure that the plan is consonant with the long-range plan originally developed for the system.

(ii) Programme Review

The long-range plan must include mechanisms to monitor institutional conformity to their roles and missions, for otherwise no real system could be said to exist. There must also be provision for rigorous programme evaluation, to determine the academic quality of the programmes concerned,

and to determine whether the necessary economies are being achieved. The programme review must also assess whether programmes in certain disciplines could be offered more effectively at fewer institutions than at present.

The Commission realizes that academic quality is not particularly susceptible of quantitative measurement or analysis and is ultimately a matter of judgement, but it is aware that academic quality is successfully assessed in other jurisdictions. The Commission does not believe, however, that an in-house Programme Review Committee in each institution would, even with the addition of external examiners, be able to establish the analytical distance required to review the university's programmes dispassionately and objectively. Nor would such a committee be able to compare the quality of the institution's programmes with similar programmes in other Nova Scotian institutions.

The solution that the Commission recommends is the review of programmes in each discipline at all universities within the system. A working party, normally consisting of academic leaders within the discipline under review, would be requested by the Council to review all programmes in the discipline within the system. The criteria for review would be academic excellence and cost-effective delivery. Leading scholars from outside the province and, indeed, outside the country should be attached to the working party to provide perspectives on academic quality in terms of national and international standards. An accountant should also accompany the party to report upon the purely financial aspects of programme delivery. The working party's report should be zero-based, insofar as it should indicate which programmes at which institutions are essential to maintain high standards of education in the discipline within the system, which programmes are less essential, which programmes are of exceptional quality though not entirely essential, which programmes are of poor quality and inessential. The report should also recommend opportunities for consolidation (or, in some cases, extension) of existing programmes for the purposes of academic excellence or cost-effectiveness. It would be useful for purposes of comparison if the report of the Nova Scotian representatives of the discipline were distinguished in the text from the reports of the outside examiners and the accountant.

Programme review should occur at least once every ten years in every major discipline offered by the system. Individual programmes might be reviewed more frequently where evidence suggested the existence of serious problems or that the nature of the discipline had undergone or was undergoing significant change, or where grave imbalances appeared between employment prospects and the numbers of graduates in occupational programmes.

(iii) Programme Approval

Like the current MPHEC, the Council should include among its responsibilities the review and approval or disapproval of all new programme

proposals. Programmes should be approved according to the priorities established on the long-range plan. The plan should not, of course, be rigid and the Council should foster and encourage institutional responses in areas calling for new programmes, especially when the need for such programmes is occasioned by new intellectual developments not foreseen in the plan. If programmes are approved, the Council must decide upon the level of resources to be provided. Conversely, the Council must have the authority to discontinue funding of programmes that programme review determines are no longer necessary to meet the established goals of the system.

In approving or discontinuing programmes and in establishing or terminating funding, the Council must be guided by the aim of rationalizing undergraduate programmes according to the system's priorities. The three essential criteria are academic excellence, demonstrated need for such a programme at the undergraduate or graduate level, and cost-effectiveness relative to other programmes competing for a share of available resources. All programmes, whether existing or proposed, in all institutions are not of equal value to the people of Nova Scotia, nor are all undergraduate programmes, existing or proposed, essential for a sound grasp of the relevant discipline at the undergraduate level.

(iv) Funding Decisions

While the Council, like the MPHEC, should advise the provincial government on the appropriate levels of operating and capital funding required by the provincial system, it should retain discretionary powers concerning the disbursal of funds. The Council will annually determine the allocations among the institutions of the available operating and capital assistance. The Council should become the administrative agency in charge of distributing the funds required for operational expenditures. The government may wish to retain authority to provide capital assistance to the universities, but it should not do so without having sought the advice of the Council.

(v) Other Matters

The Royal Commission report has identified various university matters that require study or improvement. It conceives the Council as taking up where the work of the Commission has left off and, as a permanent body with a research staff, being able to investigate in greater depth many topics that the Commission has been able to consider only in passing. Among the items mentioned elsewhere in this report that the Commission believes should be on the Council's agenda for study or implementation are:

- The establishment of a common entrance/application centre for Nova Scotian universities.
- The development of some form of common entrance examination to ensure that only those qualified for admission to university shall be admitted.

- The development of a common core curriculum in all programmes. The Commission feels that years one and two of four-year programmes would profit from the core curriculum.

- The development of an agreement as soon as possible on the distribution of programmes throughout the Nova Scotian university system.

- Concentration of specialization at specific universities so that all universities do not offer much the same range of specialized courses at the third- and fourth-year levels.

- Development of a system-wide agreement on the exchange of appropriate credit so that credit at least for undergraduate programmes and graduate-level courses will be portable between Nova Scotian universities. In those individual cases where graduate courses at another university would be valuable to the student's programme of studies, exchange of credits should be facilitated to encourage optimal use of available resources.

- Scrutiny of the present duplication of occupational training courses offered in the universities and the technological institutes and vocational schools with a view to concentration of teaching resource and associated facilities at the most appropriate locations and where the most productive results will be guaranteed.

- The development of a system plan to promote the recruitment of younger scholars or recent doctoral graduates to full-time university positions.

Related to the need for transfer of resources following agreement on the distribution of programmes is

- The development of common programmes of redundancy and pension commonality which will ensure the ready interchange of personnel between institutions in the Nova Scotian system.

It will be understood that, in addressing itself to the underlying problems of post-secondary education in this province, the Royal Commission has not been able to consider each and every issue raised in the hearings. There are, however, certain issues not mentioned previously that the Commission recommends to the Council and to the universities for their serious consideration. First of all, the Commission notes with approval that universities have recently been opening their doors to students who, even though qualified, have not traditionally undertaken academic studies because they have special needs which must be met if they are to participate significantly in their classes. To begin with, there are persons who are disabled, either physically or in their sight or hearing. Various institutions have altered or introduced architectural features to accommodate the

physically handicapped students, and some make special provision for the blind and hearing impaired. Saint Mary's, for example, has taken the initiative in providing facilities and support for the hearing impaired. The Royal Commission commends and supports these programmes that increase accessibility to university without decreasing academic standards.

During the hearings, however, the Commission was informed that professors and other instructors are not always aware of the special needs of the disabled. In particular, individual professors' mode of classroom delivery (a matter that could be easily rectified) made it difficult for disabled, especially hearing impaired, students to follow the course of the lecture. The Commission recommends that faculty demonstrate greater sensitivity to the needs of disabled students in the classroom.

Recognizing that programmes to improve university access to the disabled are costly to operate, the Commission also recommends that the proposed Council on Higher Education study the specific needs of disabled students with a view to providing financial incentives and support for programmes to improve access to university for these students. The Council should also investigate the possibility of programmes which would permit the learning disabled to participate in courses both full time and in continuing education.

Recommendations

The Commission recommends that:

- **The universities of the province should be considered, and should consider themselves, as forming a provincial system, and the plans and priorities of each university should take cognizance of, and be in accord with, the plans and priorities of the system as a whole.**

- **In a period of financial constraint and expected decline in student population, the universities must seriously consider means to promote cost-effectiveness, that is, the delivery of the highest academic standard of programme for the level of resource available to the system as a whole. To take full advantage of provincial funding, there must be an efficient means of reallocating resources, human, physical and financial, within each university and between the universities.**

- **A provincial intermediary body, called the Nova Scotia Council on Higher Education, should be established and endowed with executive authority and discretionary powers over funding in order to ensure that university planning, programming and resource allocation are performed in the context of a provincial university system.**

- **Once the Council is established, provincial government decisions to accept, adopt or approve would be required in the following areas only:**

    - **level of resource available to be provided to higher education.**

    - **provincial policies at the highest level with respect to university education. These policies would originally be developed by the Council and should be approved, amended or rejected by government only after consultation with the Council.**

    - **continuation of the Council's mandate with respect to higher education.**

- **The Council must respect the autonomy of the universities and the academic freedom of the faculty. Ultimate decisions in certain matters must be left to the universities themselves. These matters include**

- academic policies
- academic standards
- admission standards
- graduation standards
- selection and appointment of university staff

The Council should, however, have the right to hold the institutions accountable for their performance in the above areas.

- The Council must have the authority to ensure discussion and review of all topics related to the university system.

- The future composition and responsibilities of MPHEC or its successor should be established by negotiations between the three Maritime provinces. It is advisable that a regional agency be maintained for the purposes of data collection and coordination of specific programmes of regional importance.

- The Council on Higher Education should be created by statute, conferring upon it the powers of an administrative tribunal with the right to enquire into any and all things relating to higher education in Nova Scotia.

- The Council should be established as the financial recommending and financial granting agency of the Nova Scotia government for all matters of university education.

- The Council, not a section in the Department of Education, should be given the responsibility for advising the Minister of Education in university matters.

- Members of the Council must be chosen for their recognized ability and understanding of academic and administrative affairs. Councillors must be prepared to transmit to both universities and government, with the greatest of sensitivity, public concerns about the activities and performance of the university system.

- The Chairman or Chairwoman of the Council must be full-time, and the other councillors must be able to dedicate at least four to six days a month exclusively to the work of the Council.

- There should be seven members of the Council, including the Chair. No more than two persons should be currently active in the universities and no more than two persons should be currently active in government. Of the seven councillors, one should be a recognized spokesman or spokeswoman for science and technology and one for the arts and humanities. Appointments to the Council should be by order-in-council for staggered terms.

- The Chair of the Council should normally be occupied by one of the non-governmental and non-academic members.

- The Council should select its own Secretary and research staff. To attract the best qualified staff available, the Council should be permitted to dispense with Civil Service regulations in hiring its personnel.

- The Council's chief areas of responsibility should be
  - planning for the system
  - programme evaluation and coordination
  - budgeting for the system

- The Council's first responsibility must be to develop a long-range comprehensive plan for higher education in Nova Scotia. This plan should represent the system response to matters of university education in the province.

- As a corollary of the long-range plan, each university should be encouraged to initiate a planning process that would clarify the institution's specific role and mission within the provincial system.

- Review of programmes in a particular discipline should occur on a system-wide basis to determine whether the programmes are of high standard and whether they could be more effectively delivered at a reduced number of institutions.

- The Council should request working parties composed of academic leaders within the discipline under review to assess all the programmes in the discipline within the system in terms of academic excellence and cost-effective delivery.

- Programme review should occur at least once every ten years in every major discipline within the system, and more frequently where evidence suggested the existence of serious problems or where changed circumstances had affected the nature of the discipline.

- The Council should be responsible for the review and approval or disapproval of all new programmes proposed by the province's universities.

- The Council must have the authority to discontinue funding of programmes that programme review determines are no longer necessary to meet the established goals of the system.

- It should be recognized that all programmes, whether existing or proposed, in all institutions are not of equal value to the people of Nova Scotia, nor are all undergraduate programmes, existing or proposed, essential for a sound grasp of the relevant discipline at the undergraduate level.

- **The Council should annually determine the allocations among the institutions of the operating and capital assistance provided by the province. The Council should be the administrative agency in charge of distributing the funds provided for operational expenditures.**

- **A portion of the operational funding annually supplied to the system should be spent at the discretion of the Council to effect beneficial change in the system.**

- **The Council should monitor financial management within the system to ensure that a high standard prevails throughout. The Council should promote regular assessments of costs including details by institution, by department, by programme and by course.**

- **The Council should study the specific needs of disabled students with a view to providing financial incentives and support for programmes to improve access to university for these students.**

- **Should the Council on Higher Education prove inadequate to coordinate the academic programmes and expenditures of the universities, the provincial government should consider the consolidation of the separate institutions in a University of Nova Scotia.**

Chapter Five

Occupational Education

At the beginning of this decade, a survey of Nova Scotian firms revealed that over 30% believed that their operations were limited due to shortages of skilled labour. Thus, as the Halifax Board of Trade observed, 'Skill shortages translate into foregone economic activity and with that, lost jobs and income.' Giving a graphic instance of the difficulty, the Nova Scotia Federation of Labour asked, 'What value is there in having a Venture oil or gas field off our shores, the funding for the exploration of which is provided through government sources, if we do not have workers who are sufficiently trained to take the jobs on oil rigs off the coast?' As is evident, both management and labour agree that with high unemployment rates and a per capita income that is below the national average, Nova Scotia cannot afford to be unable to meet labour market demands because of a lack of properly trained, skilled workers.

In the past, Nova Scotia relied to some extent on the immigration of skilled labour to make up for shortages in the provincial labour market. In the future, however, this option will become less practicable. Nova Scotia receives only 1% of the total number of foreign immigrants to Canada; in 1983-84, Nova Scotia received 845 immigrants in all, while the provincial labour force was some 387,000 strong. Furthermore, the skill shortages in Nova Scotia are similar to those in the rest of Canada and, in some instances, to those in the rest of the world. In 1980, for instance, the province suffered from a severe shortage of skilled workers in processing, metal machining, general machine operation and general product fabrication. In consequence, skilled labour-intensive industries such as machinery and transportation equipment and the electrical and chemical product industries experienced great difficulty in hiring skilled workers. At the same time, the Economic Council of Canada in its Human Resources Survey estimated that throughout Canada during the period 1980-1984, most of the shortages — 22.3% — would occur in product fabricating, assembling and repairing occupations, while 13.4% would occur in machining and related occupations, 12.2% in occupations in the natural sciences, engineering and mathematics and 7.5% in processing occupations. The provincial shortages thus corresponded to those in the rest of Canada. For certain skills in machining, engineering and computing there are world-wide skill shortages. In short, Nova Scotia finds itself competing with the rest of Canada and the world to attract the skilled

workers who are essential for economic development. It is clear that an adequate supply of skilled labour would permit a greater number of options in economic planning and more assured development: hence the crucial importance of technical and vocational education to the provincial economy.

Furthermore, a decline in the number of young people coming onto the labour market over the next two decades necessitates a change in emphasis in occupational education. The same decline in numbers of 15- to 19-year-olds that will affect university enrolments will also affect enrolments in the technical and vocational schools, and consequently the availability of young people trained in various occupational skills. To maintain the numbers of skilled tradespeople, technical and vocational occupation will have to lay greater stress on retraining and upgrading adults who are already in the workforce and arrangements must be made by government and the private sector to enable increasing numbers of working adults to do so.

I. The Current Situation

Institutions and Levels of Occupational Education

Occupational education is frequently regarded as an undifferentiated whole, but it is provided at very different levels in a variety of distinct institutions. The Department of Education evidently assumes that there is a distinction between technical and vocational education because both words are used in the title of the new subdepartment of Vocational and Technical Training. The distinction is not absolutely clear, however, because some technical level courses are offered in the regional vocational schools, and some vocational level courses are offered in the technical institutes. To clarify matters, it should be noted that the difference lies both in the level of skills required and in the academic prerequisites necessary for admission to each type of training.

Vocational education may be assumed to refer to any form of non-university education that trains the student in the skills of an occupation and requires completion of Grade X or under for entry into the various courses. It is primarily education at the secondary level.

Technical education, on the other hand, involves the mastery of complicated techniques and processes and some theoretical knowledge as part of the training, and requires completion of Grade XI or above for admission. It is therefore primarily education at the post-secondary level.

The term **'technological education'** is sometimes used for the higher levels of technical education, insofar as the technologist is presumed to have a greater knowledge of theory as well as technique than the technician, but the increasing sophistication of many occupations may render the verbal distinction imprecise.

In this chapter the terms vocational and technical will be used to indicate the two main levels of what will be called **occupational education** when considered as a whole.

(a) Secondary Schools

In Nova Scotia, there is also an **introductory level of occupational education** in the Industrial Arts and Business Education courses provided in some of the secondary schools. Courses in Industrial Arts include woodworking, metalworking, graphic communications, power mechanics, electronics and occasionally non-credit subjects such as printing and autobody. Business Education courses include accounting, business communications, management, consumer education, law, office procedures, record keeping, shorthand and typing. According to the Department of Education, the Industrial Arts programme is 'designed to meet the needs of high school students who wish to explore leisure time and avocational interests and pursuits encouraged by this program, as well as who [*sic*] are planning to pursue advanced study and careers in areas such as applied and technical sciences and industrial vocational education, or who will be entering the labor force.' Similarly, 'Individual business courses are designed to contribute to basic education for all students, regardless of career plans, and business sequences are intended to prepare students for business and office occupations.'[1] Thus, since both Business Education and Industrial Arts in high schools serve both to prepare students for the workforce and to introduce certain occupational skills to students who may not have to earn their living from those skills, this level of occupational training is best termed introductory. (It should be noted, however, that some students who have completed Grade XI enrol in a specialist Business Education programme in their high school and do not take the usual mixture of high school courses. This Business Education programme may be considered occupational education at the technical level.)

(b) Vocational Schools

The vocational schools of the province are, as their name implies, the principal providers of vocational education though they offer some courses at the technical level. As can be seen from Tables 1 and 2, 75.2% of the courses taught in these schools in 1984-85 require Grade X or under for entrance, while only 24.8% require Grade XI or above. There are fourteen vocational schools in all.

Eleven regional vocational schools are operated directly by the Department of Education, which appoints their governing boards, the principal of each school serving as board secretary. Three district vocational schools are operated by amalgamated school boards in Kings, Colchester-East Hants and Northside-Victoria. In these cases the school board appoints the vocational board. Each of the fourteen vocational schools determines its own curriculum and standards, though deposit of course outlines with the

TABLE 1
Courses Offered at Nova Scotian Vocational Schools
1984-85

Description	Prerequisites: Not Specified	Grade VII	Grade VIII	Grade IX	Grade X	Grade XI	Grade XII	Previous Course	Courses Offered	No. of Schools
Accounting	—	—	—	—	1	5	1	—	7	7
Accounting Technology	—	—	—	—	—	—	—	1	1	1
Audio Visual Tech.	—	—	—	—	—	—	1	—	1	1
Automotive Services	—	—	1	—	—	—	—	—	1	1
Banking & Finance Clerk	—	—	—	—	—	1	—	—	1	1
Beauty Culture	1	—	—	4	7	1	—	—	13	13
Bricklaying	1	—	—	4	—	—	—	—	5	5
Building Tech.	—	—	—	—	—	1	—	—	1	1
Business Admin.	—	—	—	—	—	1	1	—	2	2
Bus. Computer Programming	—	—	—	—	—	—	2	—	2	2
Business Education	—	—	—	—	1	—	—	—	1	1
Bus. Computer Operator	—	—	—	—	—	1	—	—	1	1
Bus. Equipment Tech.	—	—	—	—	—	1	—	—	1	1
Bus. Admin. Tech.	—	—	—	—	—	1	—	—	1	1
Cabinet Carpentry	—	—	—	1	1	—	—	—	2	2
Carpentry	1	—	—	6	7	—	—	—	14	14
Child Care Attendant	—	—	—	—	—	—	1	—	1	1
Clerk Typist	—	—	—	1	4	1	—	—	6	6
Commercial Art	—	—	—	—	2	1	—	—	3	3
Comm. Baking	—	—	—	1	—	—	—	—	1	1
Comm. Cooking	1	—	—	7	—	—	—	—	8	8
Data Processing	—	—	—	1	—	2	2	—	5	5
Denture Tech.	—	—	—	—	—	—	1	—	1	1
Dining Room Services	—	—	—	3	—	—	—	—	3	3
Drafting Archit.	1	—	—	—	2	5	—	—	8	8
Drafting Mechan.	1	—	—	1	1	3	—	—	6	6
Electrical Appliance Repair	—	—	—	—	1	—	—	—	1	1
Elect. Construction Wiring	1	—	—	1	6	3	—	—	11	11
Electronics-Cable TV	—	—	—	—	1	—	—	—	1	1
Electronics	1	—	—	2	1	7	—	—	11	11
Food Service	—	—	—	—	—	1	—	—	1	1
Forestry	—	—	1	—	—	—	—	—	1	1
Utility Equipment Rep.	—	—	—	—	2	—	—	—	2	2
Heavy Duty Equipment Rep.	—	—	—	2	4	—	—	—	6	6
Home Health Aide	—	—	—	1	—	—	—	—	1	1

Table 1 (continued)

Horticultural Services	—	—	—	—	1	—	—	—	1	1
Hotel-Motel-Rest. Mgmt.	—	—	—	—	—	1	—	—	1	1
Ind. Electricity	1	—	—	—	3	—	—	—	4	4
Ind. Instrumentation	1	—	—	—	—	1	—	—	2	2
Ind. Mechanics	1	—	—	1	2	1	—	—	5	5
Intermed. Ind.	1	1	2	4	—	—	—	—	8	7
Intro. Electrical	—	—	—	1	—	—	—	—	1	1
Machine Shop	2	—	—	3	5	1	—	—	11	11
Marine Diesel	—	—	—	1	2	—	—	—	3	3
Marine Fishing	—	—	—	1	—	—	—	—	1	1
Meat Cutting	—	—	—	—	1	—	—	—	1	1
Motor Veh. Rep.-Body	1	—	—	10	—	—	—	—	11	11
Motor Veh. Rep.-Mechan.	1	—	—	6	7	—	—	—	14	14
Nursing Asst.	—	—	—	—	6	—	—	—	6	6
Painting & Wood Finishing	—	—	—	1	—	—	—	—	1	1
Photography	—	—	—	—	—	1	—	—	1	1
Plumbing	1	—	—	5	4	—	—	—	10	10
Pre-Technology	—	—	—	—	—	1	—	—	1	1
Printing & Duplicating	—	—	—	—	1	—	—	1	2	1
Radio & TV Broadcasting	—	—	—	—	—	—	1	—	1	1
Receptionist	—	—	—	—	—	1	—	—	1	1
Refrigeration & Air Cond'g.	—	—	—	—	2	1	—	—	3	3
Retail Mgemt.	—	—	—	—	—	1	—	—	1	1
Retail Merchandising	1	—	—	5	3	—	—	—	9	9
Secondary Industrial	—	—	—	—	1	—	—	—	1	1
Sheet Metal	—	—	—	2	—	—	—	—	2	2
Shipwright	—	—	1	—	—	—	—	—	1	1
Small Gas Engine Repair	—	—	—	2	1	—	—	—	3	3
Stationary Engineer	1	—	—	—	1	1	—	—	3	3
Secretarial	—	—	—	1	1	4	1	—	7	3
Secretarial-Dicta Typist	—	—	—	—	—	1	—	—	1	1
Steamfitting-Pipefitting	1	—	—	1	1	—	—	—	3	3
Stenography	—	—	—	—	2	2	1	—	5	4
Inventory Control and Stockroom Clerk	1	—	—	1	1	—	—	—	3	3
Stockroom & Receiving Clerk	—	—	—	2	—	—	—	—	2	2
Welding	1	—	—	9	1	1	—	1	13	12
Total	22	1	5	91	87	53	12	3	274	—
% of Total	8.0%	0.4%	1.8%	33.2%	31.8%	19.3%	4.4%	1.1%	100.0	—

Source: Nova Scotia Department of Labour and Manpower, *Directions 84-85*, Vol. I; information supplied by Nova Scotia Department of Education.

TABLE 2
Prerequisites for Courses Offered at Nova Scotian Vocational Schools
1984-85

School	Vocational Courses	Technical Courses	Total	% Vocational	% Technical
Annapolis	15	6	21	71.4	28.6
Burridge	16	4	20	80.0	20.0
Canso	20	3	23	87.0	13.0
Cape Breton	20	3	23	87.0	13.0
Colchester	17	2	19	89.5	10.5
Cumberland	13	—	13	100.0	—
Dartmouth	18	13	31	58.1	41.9
Halifax	10	9	19	52.6	47.4
Hants	12	—	12	100.0	—
Kings	17	14	31	54.8	45.2
Lunenburg	19	2	21	90.5	9.5
Memorial	14	1	15	93.3	6.7
Pictou	6	8	14	42.9	57.1
Shelburne	9	3	12	75.0	25.0
Total	206	68	274	75.2	24.8

Source: Nova Scotia Department of Labour and Manpower, *Directions 84-85*, Vol. I; information supplied by Nova Scotia Department of Education.

Vocational and Technical Training Division of the Department of Education has been required. The schools are primarily intended for young persons (under the age of 21) who wish to acquire trade skills. Admission standards vary by the course and by the school: in any one school, certain courses may require Grade XI or Grade XII completion while others do not; in different schools, courses with the same description may have different entrance requirements. Table 1 indicates the diversity of entrance requirements for similar courses offered at different schools. It may be added that apart from different entrance requirements, the length of the courses also varies according to the school and does not necessarily have any connection with the grade level prerequisite. Table 2 indicates the mixture of vocational and technical courses at each school. As can be seen, Dartmouth, Halifax, Kings and Pictou Vocational Schools teach exceptionally large numbers of technical courses.

The vocational schools function in much the same way as regular high schools — the Memorial High School in Sydney Mines in fact combines both a high school and a vocational school under one roof — with a school day lasting from about 8:30 a.m. to about 4:00 p.m., depending on the school, from September to June. Transportation is provided in most cases, but some schools offer financial assistance to students who must board in town in order to attend classes. Most of the students in each school come from the immediate vicinity, but there are no strictly defined catchment areas for each school.

(c) Apprenticeship

The apprenticed trades courses, which are open both to young people over 17 years of age and to adults, are chiefly at the vocational level. The apprenticeship programme is under the supervision of the Apprenticeship Division of the Department of Labour and Manpower, with facilities and instruction provided by the Nova Scotia Institute of Technology, the University College of Cape Breton, the Adult Vocational Training Centres (AVTCs) and the vocational schools. Would-be apprentices may be selected by the Canada Employment and Immigration Commission (CEIC) for pre-employment training, which normally lasts 16 to 40 weeks. Otherwise, they may independently choose to study courses in an apprenticeable trade for two years at a vocational school. Upon successful completion of this preliminary training, the student must find employment in his or her trade in order to be registered by the Department of Labour and Manpower as an apprentice. The apprentice returns to the institution for four to eight weeks a year over the length of his or her apprenticeship (usually four years) for further, block-release courses. Following a joint application by employer and employees, persons already employed in a designated trade may also apply to the Department of Labour and Manpower to become registered apprentices and attend block-release classes. At the end of the apprenticeship period, the trainee may become a certified journeyman by passing an examination set by

the Department of Labour and Manpower. In certain trades, a successful result in an Interprovincial Examination entitles the journeyman to a certificate with a red seal, which permits the journeyman to practise across Canada. The CEIC determines the specific apprenticed trades and the number of new apprentice trainees it will support at the beginning of each fiscal year. CEIC funds are administered by the Department of Labour and Manpower, which disburses them to the institutions.

(d) Institutional Adult Training

Adult occupational education, chiefly at the vocational level, is provided by the Department of Education through the Cape Breton and Dartmouth Adult Vocational Training Centres (AVTCs). In addition, courses at the vocational level are given at the Fisheries Training Centre and the College of Art and Design and in the vocational programme of the Agricultural College and the Professions et Métiers programme at the Université Sainte-Anne. In all of the above institutions, many students are financed by the Canada Employment and Immigration Commission, which purchases blocks of training places for its clients, the funds being administered by the provincial Department of Labour and Manpower. By arrangement with the CEIC and Labour and Manpower, the Vocational and Technical Training Division of the Department of Education develops course modules for training in specific trades. These modules, funded by CEIC, are delivered in various locations, including the regional vocational schools after the close of the school day. The range of courses offered by adult education institutions and programmes is broader than that offered by the vocational schools, though many courses are very specialized. Unlike courses at the vocational schools whose length is usually some multiple of the school year, courses at the adult institutions are of varying length, the course length being adapted to the time required for the subject matter.

(e) Technological Institutes

Technical education is provided primarily by the technological institutes and by the universities. The Commission was extremely impressed by the high standards and academic rigour of the technological institutes: the Institute of Technology (NSIT), the Land Survey Institute (NSLSI) and the Nautical Institute (NSNI). During the hearings, the high quality of the courses at the Land Survey Institute and the Institute of Technology was described as 'the best-kept secret in Nova Scotia', and the Commissioners are inclined to agree. Advanced occupational education is also provided by Agricultural College in its Technician and Technology programmes and by the University College of Cape Breton in its Technology programme. Prerequisites, that is, completion of Grade XI or XII, are similar to those for university entrance, and usually the technical education institutions stipulate more required high school courses in mathematics and the sciences than the universities do. **The information the Commissioners have received during**

their investigations is that the entrance qualifications for the technological institutes are noticeably higher than those for the universities. The school year at the technological institutes is longer than the university year, since both start at about the same time in late August or the beginning of September, but the institutes continue until June.

(f) Universities

University programmes in certain subjects leading to a certificate or diploma may be more conveniently considered as technical education, rather than as academic, because of the degree of specialization in a practical subject and the deficiency of liberal arts courses. The principal programmes of this nature are the Technician and Technology programmes at the Agricultural College and the Technology programme at the University College of Cape Breton. In addition to these, however, are the one-year certificates and two-year diplomas in many technical subjects offered at the undergraduate level in the province's universities. Such programmes include Child Study, Costume Studies, Secretarial Arts, Gerontology, Community Animation, Dental Hygiene, Meteorology, Jazz Studies, Commerce, Public Administration and various Education programmes.

(g) Private Sector Institutional and Workplace Training

Outside the occupational education institutions over which the province has some degree of control or, through funding, influence, there are a considerable number of private trade schools. They teach a variety of vocational and technical subjects, including business practices, secretarial studies, foreign languages, computer programming, animal care, diving, hairstyling, survival methods and safety on the job. Some are accredited by national occupational organizations, others are not.

Apart from the apprenticeship programmes, little formal training is provided in the workplace. A provincial manpower survey undertaken in 1981 revealed that while 60% of the firms interviewed considered industry to be primarily responsible for training, 53% gave training a low priority. In this, Nova Scotia resembles the rest of Canada which, especially since World War II, has had a poor record of industrial training. According to the Human Resources Survey conducted by the Economic Council of Canada in 1980, 60% of the firms reporting back had some form of training programme in 1979, but only 19% of these firms had training programmes lasting longer than one year. There are no corresponding statistics for Nova Scotia, but the situation is probably the same. The small size of most Nova Scotian firms has prevented them from undertaking training programmes or even developing manpower plans, the in-house training undertaken at the Michelin plants being an exception. By comparison, in West Germany and other European countries, about 85% of the firms train on the job, looking upon training as an investment and not as a cost.[2]

Student Numbers

Whereas the number of full-time-equivalent students in the university system may be calculated fairly easily, the same is not true of the occupational education system. Although full-time equivalents may be calculated for some institutions, the great diversity of programmes and lengths of programme precludes the calculation of any full-time-equivalent total enrolment that can be compared with the total enrolment in the universities. Furthermore, since there is no central coordinating authority for all units of the occupational education system, the statistical data provided differ from institution to institution and thus do not lend themselves to conflation. The main users of enrolment data, namely the Department of Education, CEIC and Statistics Canada also differ in their presentation of this data, because of the different interests of each agency.

(a) Base Figure for Enrolment and Significant Trends

The base figure for enrolment in the occupational education system is provided by Table 3. This shows the numbers of occupational students in the high schools, vocational schools and the adult vocational training courses and modules, and the full-time equivalents of post-secondary technical students in the technological institutes and hospital nursing schools. **In 1983-84, the last year for which all figures are available, at least 12,571 people were enrolled for some time in the occupational education system. The equivalent figure for the university system was 29,255 (Chapter 1, Table 6).**

It should be noted that the figures for AVTCs represent only those students sponsored by the CEIC, but those students are estimated to constitute over 99% of AVTC enrolment. (The courses excluded are meat-cutting in Sydney — maximum enrolment 12 at one time — and Comprehensive Basic Skills Training, mostly for the disabled, with a maximum enrolment of 10 at one time in courses delivered in Sydney and Dartmouth.)

As can be seen, the general trend of enrolment in occupational education as shown in this table is very different from the trend in university enrolment since 1977-78. In 1977-78 the number of students in the occupational system was 14,458; in 1983-84, only 12,571, a decline of 13.1%. Where university enrolments have increased, enrolments in the occupational system regarded as a whole have declined, though there was a slight recovery in 1981-82.

The decline is mainly at the vocational level, however, and not at the technical level. Enrolments in high school commercial courses and in the AVTCs have declined precipitously, while enrolment in the vocational schools has remained steady. On the other hand, post-secondary enrolments in the technological institutes and hospital nursing schools have experienced increases equal or superior to the increases in university enrolments. Enrolments in the technological institutes rose 31.8% between 1977-78 and 1983-84 and 29.4% in the hospital schools during the same period, even though nursing enrolments in 1983-84 declined slightly from 1982-83.

TABLE 3
Occupational Enrolments in Nova Scotian High Schools and Vocational Schools and Post-Secondary FTE Enrolments in the Technological Institutes and Hospital Nursing Schools 1977-1985

Institution	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
High Schools								
— Commercial	524	539	383	367	406	222	271	256
Vocational Schools								
— DVS	1,443	1,436	1,512	1,417	1,448	1,450	1,462	1,378
— RVS	4,825	4,645	4,854	4,893	4,918	5,102	4,762	4,448
Subtotal	6,268	6,081	6,366	6,310	6,366	6,558	6,224	5,826
AVTCs and modules	5,708	4,722	4,235	4,197	4,344	3,812	3,511	N/A
Technological Institutes								
NSAC	255	257	265	262	246	255	218	223
NSIT	307	302	290	306	336	370	355	N/A
NSLSI	116	126	99	127	140	127	113	105
NSNI	164	115	264	257	371	306	354	N/A
UCCB	440	501	505	529	520	593	650	598
Subtotal	1,282	1,301	1,423	1,481	1,613	1,651	1,690	N/A
Hospital Schools	676	661	704	733	823	895	875	N/A
Total	14,458	13,304	13,111	13,088	13,552	13,138	12,571	N/A

Source: High Schools and Vocational Schools and AVTCs: N.S. Dept. of Education. Other Institutions: Statistics Canada.

TABLE 4
Enrolments in Nova Scotia Institute of Technology
1977-78 to 1984-85

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
Applied Arts and Technology								
Enrolments								
Male	192	187	186	200	236	257	242	206
Female	212	217	196	205	209	253	218	171
Total	404	404	382	405	445	510	460	377
Completions								
Male	147	141	143	137	165	196	164	160
Female	143	139	143	129	142	168	170	154
Total	290	280	286	266	307	364	334	314
Apprenticeship Courses								
Enrolments								
Male	1,879	1,960	1,818	1,817	1,834	1,684	1,414	1,376
Female	20	27	29	33	12	27	61	54
Total	1,899	1,987	1,847	1,850	1,846	1,711	1,475	1,430
Completions								
Male	1,841	1,909	1,778	1,785	1,811	1,622	1,362	1,333
Female	20	27	28	32	11	27	51	52
Total	1,861	1,936	1,806	1,817	1,822	1,649	1,413	1,385
Other Courses								
Enrolments								
Male	N/A	67	124	163	151	195	179	203
Female	N/A	18	69	85	126	72	76	120
Total	N/A	85	193	248	277	267	255	323
Completions								
Male	N/A	34	119	104	107	134	90	112
Female	N/A	13	49	60	91	55	57	88
Total	N/A	47	168	164	198	189	147	200

Source: N. S. Dept. of Education, *Annual Reports*; and Vocational and Technical Training.

(b) Numbers of Non-Post-Secondary Students at the Technological Institutes and CEIC Students

As was mentioned above, Table 3 provides a base figure for occupational enrolment. The number of other students at the AVTCs is not particularly significant, but notice should be taken of apprentices and other non-post-secondary students at the institutes of technology. Table 4 indicates enrolments at NSIT from 1977-78 to 1984-85. Students in the applied arts and technology courses are considered post-secondary by the province, but not necessarily by Statistics Canada; hence the discrepancy between the figures in Tables 3 and 4. Enrolments in these courses rose from 404 to 510 during the period in question, or 26.2%, between 1977-78 and 1982-83, but have since fallen to 377, for a net decline of 6.7%. Enrolments in apprenticeship courses, not recorded in Table 3, have declined from 1,899 to 1,430, or 24.7%. (In 1975-76, by comparison, 2,113 students were enrolled as apprentices). Other industrial courses, in non-apprenticed trades, have shown a steady increase in attendance.

Total enrolment figures for students in all lengths of courses at the Nautical Institute (see Table 5) are very much higher than the post-

TABLE 5
Enrolments in AVTCs, NSLSI and NSNI
1977-1983

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
AVTCs and Modules								
Enrolments								
Male	3,273	2,674	2,243	2,110	2,185	2,157	1,959	N/A
Female	2,435	2,048	1,992	2,087	2,159	1,655	1,552	N/A
Total	5,708	4,722	4,235	4,197	4,344	3,812	3,511	N/A
Completions								
Male	1,563	1,369	1,247	1,298	1,369	1,461	1,298	N/A
Female	1,183	1,017	1,019	1,219	1,398	1,162	1,154	N/A
Total	2,746	2,386	2,266	2,517	2,767	2,623	2,452	N/A
NSLSI								
Enrolments[a]								
Male	103	118	83	112	117	80	98	106
Female	18	20	21	22	22	17	24	26
Total	121	138	104	134	139	97	122	132
Graduated								
Male	91	98	62	85	79	51	75	53
Female	16	17	16	18	17	14	14	12
Total	107	115	78	103	96	65	89	65
NSNI								
Enrolments								
Male	1,251	1,473	—	—	—	—	—	—
Female	230	237	—	—	—	—	—	—
Total	1,481	1,710	1,178	1,195	1,865	3,757	4,073	4,234
Completions								
Male	1,008	1,157	—	—	—	—	—	—
Female	159	156	—	—	—	—	—	—
Total	1,167	1,313	929	939	1,464	3,474	3,761	3,466

Notes
a. Does not include FTE of part-time.

Source: N.S. Dept. of Education, *Annual Reports*.

secondary enrolments in Table 3. A maximum of 4,234 persons benefited from courses offered at the Institute in 1984-85, but the Commission has been advised that this figure may double count students who enrolled in more than one course.

Within the system, a large number of students are funded by the Canada Employment and Immigration Commission. The Department of Education figures for CEIC-sponsored students between 1977-78 and 1983-84 are shown in Table 6, which indicates enrolments in the Fisheries Training Centre, private schools and other training institutions besides those included in Table 3. In that year, CEIC funded the institutional training of 10,113 students, of whom 7,701 where men and 2,412 were women. The trends indicated are similar to those in Table 3, namely a general decline in enrolment, except at the technical level.

(c) Total Students in Institutional Occupational Education

With the available sources of information on occupational enrolments taken into account, it may be seen that the base figures in Table 3 may be

TABLE 6
Adult Education Students Sponsored by
Canada Employment and Immigration in Nova Scotia
1977-78 to 1983-84

Institution	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
AVTCs and Modules							
Male	3,273	2,674	2,243	2,110	2,185	2,157	1,959
Female	2,435	2,048	1,992	2,087	2,159	1,655	1,552
Total	5,708	4,722	4,235	4,197	4,344	3,812	3,511
NSIT							
Male	1,930	2,001	2,003	2,011	2,015	1,869	1,536
Female	52	58	130	152	160	116	136
Total	1,982	2,059	2,133	2,163	2,175	1,985	1,672
NSNI							
Male	249	274	330	347	483	830	805
Female	7	4	6	3	10	20	37
Total	256	278	336	350	493	850	842
NSLSI							
Male	18	20	11	33	57	62	76
Female	3	3	5	9	23	25	15
Total	21	23	16	42	80	87	91
NSAC							
Male	376	448	322	358	199	367	N/A
Female	91	65	56	67	37	81	N/A
Total	467	513	378	425	236	448	N/A
Fisheries Centre							
Male	512	374	612	870	1,023	818	N/A
Female	336	98	37	147	177	172	N/A
Total	848	472	649	1,107	1,200	990	N/A
Other Govt.							
Male	50	182	472	431	472	307	352
Female	80	33	227	232	148	117	95
Total	130	215	699	663	620	424	447
UCCB							
Male	901	937	994	1,038	946	855	578
Female	—	1	2	5	2	1	3
Total	901	938	996	1,043	948	856	581
Private Schools							
Male	415	366	517	472	452	383	238
Female	317	252	322	383	426	221	159
Total	732	618	839	855	878	604	397
Other Non-Govt.							
Male	132	114	83	97	115	53	48
Female	116	111	52	108	41	4	5
Total	248	225	135	205	156	57	53
Totals							
Male	7,856	7,390	7,587	7,767	7,947	7,701	5,592
Female	3,437	2,673	2,829	3,193	2,183	2,412	2,002
Total	11,293	10,063	10,416	10,960	11,130	10,113	7,594

Observations

1. 1983-84 figures for N.S. Department of Fisheries, N.S. Agricultural College and Department of Social Services not included in Department of Education report.
2. Figures do not include persons training under Disabled Persons Training.

Source: N.S. Department of Education: Vocational and Technical Training.

incremented by some thousands. This is especially true of the enrolment figures provided by Statistics Canada for the so-called community colleges, because Statistics Canada uses a narrower definition of post-secondary occupational education than has been used in this report. An impression of the full size of occupational enrolment may be gained by adding to the base figures in Table 3 the numbers of apprentices at UCCB (Table 6) and the students at NSIT and NSNI found in Tables 4 and 5, but excluded in Table 3. For 1977-78 the base figure of 14,458 could be incremented by about 4,000 and in 1983-84 the base figure of 12,571 could be incremented by about 6,000. **These figures are approximations, of course, but they reveal that in both these years the total number of people who received some course (not necessarily of an academic year's duration) from the occupational education system is approximately 18,500.** Inspection of the figures indicates that over the past nine years, annual enrolments in the occupational system have ranged from 16,000 to 19,000.

(d) Number of Training Starts

CEIC's own figures, shown in Table 7, employ a somewhat different base, namely the number of new students supported by CEIC as of 1 April every year. Table 7 gives a picture of the number of full-time training starts funded by CEIC from 1977-78 to 1983-84. (The number of part-time starts is fairly small: in 1983-84 it was 542, with 186 in Skills Training, 2 in Language Training and 354 in apprenticeship programmes; the division of these numbers by sex is not available.) The total number of full-time starts both in institutional and industrial training decreased over the period, as did the rate of female participation in most training programmes. Of the programmes classified under 'Other', women constituted 44.0% of 1,055 Basic Training for Skills Development trainees in 1983-84 (down from 52.1% of 1,684 in 1977-78), 61.5% of 512 Job Readiness trainees (up from 37.0% of 81 in 1977-78), 95.2% of 249 Occupational Orientation trainees (compared to 99.5% of 194 in 1980-81, when this programme replaced Work Adjustment Training in Nova Scotia) and 61.7% of the 115 Language trainees (compared to 39.3% of 211 in 1979-80).

(e) Sex of Students

The majority of students in the occupational system are male, though the proportion of males to females varies according to the institution and type of training delivered. The most accurate survey of vocational school programme enrolments, undertaken by the Department of Education for the 1984-85 school year, shows that of the 5,809 students in the system, 1,970, or 33.9%, were women. Male and female students still tend towards traditional occupational subjects. Courses involving heavy manual labour are, as might be expected, taken mainly by men. Over 90% of the students in carpentry, industrial machinery and vehicle and equipment repair courses are men, who also form a similar percentage of the enrolment in bricklaying,

TABLE 7
Industrial and Institutional Training Funded by CEIC
Full-Time Trainees Started, by Type of Training, Nova Scotia,
1977-78 to 1983-84
Showing Percentage of Female Trainees by Programme

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
Institutional							
Skills	4,662	3,679	4,532	4,371	4,341	4,381	3,856
% Female	33.2%	33.1%	29.8%	30.0%	30.2%	22.4%	19.5%
Apprenticeship	2,893	2,501	2,823	2,627	2,448	2,416	2,045
% Female	1.4%	2.6%	1.5%	1.2%	1.4%	1.8%	2.3%
Other[a]	2,002	1,523	2,076	1,919	1,926	1,949	1,931
% Female	49.3%	52.4%	55.1%	58.3%	60.8%	50.4%	48.1%
Total	9,557	7,703	9,431	8,917	8,715	8,746	7,832
% Female	26.9%	27.0%	26.9%	27.6%	28.9%	24.0%	24.1%
General Industrial							
	4,625	6,019	5,128	3,862	4,034	1,768	2,127
% Female	38.0%	32.8%	32.4%	29.9%	26.8%	30.0%	27.9%
Critical Trade Skills[b]	—	—	—	—	—	105	230
% Female	—	—	—	—	—	1.9%	0.9%

Notes
a Language Training, Basic Training for Skills Development, Job Readiness Training and Occupational Orientation and Work Adjustment Training.
b Figures differentiated from General Industrial only after 1982-83.

Source: CEIC, *Annual Statistical Bulletins.*

shipbuilding, forestry, meat cutting, plumbing and welding courses. Women, on the other hand, make up over 90% of the enrolment in business education, secretarial, receptionist, nursing assistant and cosmetology courses. Courses in which the sexes are more or less balanced (no sex with less than 40% or more than 60% of the enrolment) tend to be in the white-collar areas: business administration and hotel and retail management, computer programming, data processing, and graphic design, but there is also a balanced enrolment in baking, cooking, horticultural maintenance and stock control clerk courses.

Table 5 shows that women have represented somewhat over 40% of AVTC Enrolment between 1977-78 and 1983-84. In the first year, of 5,708 students, 2,435 or 42.7% were women, while in 1983-84, 1,552 or 44.2%, of the total 3,511 were women. Again, the sexes appear to enrol in courses leading to traditional occupations, but the higher aggregate percentage of women in the AVTCs as opposed to the vocational schools is accounted for by the large number of women enrolled in business education and waiter/waitress courses. (In 1977-78, for instance, no less than 658 women were enrolled in the 42-week-long business education courses.)

Tables 4 and 5 indicate that there are relatively small percentages of women in courses delivered by the Land Survey Institute and the Nautical Institute and also in the apprenticeship programme at NSIT. In NSIT's Applied Arts and Technology courses, women predominate in dental assisting and dental, food service, medical laboratory and nuclear medicine technology, while men predominate in construction administration, electrical and electrical engineering technology, petroleum resources technology and process operations.

(f) Teaching Staff

Women constitute about 99% of the enrolment in hospital nursing schools, and 100% of the full-time teaching staff between 1977-78 and 1983-84 (see Table 8).

Most teachers in the rest of the occupational system are men, but the percentage of the total represented by women has increased while the total number of teachers has fallen. In 1977-78 there were 429 teachers in the regional vocational schools, of whom 84, or 19.6%, were women. In 1984-85, there were 418 teachers, of whom 88, or 21.1%, were women.

In the institutions defined by Statistics Canada as community colleges, nearly all the teachers at the trade level are men. At the post-secondary level, the number of teachers has tended to increase: the sharp decrease between 1981-82 and 1982-83 shown in Table 8 is attributable to the removal of the Agricultural College from the institutions defined by Statistics Canada as community colleges.

Between 1977-78 and 1981-82, the total number of post-secondary level teachers in the technological institutes grew from 149 to 174; then, after the exclusion of Agricultural College from the reporting base, there was growth in the next two years from 136 to 148. The number of post-secondary level women teachers has likewise increased during the period, and women now represent a larger proportion of the whole than at the beginning. In 1977-78 women formed 16.1% of the post-secondary teaching staff. In 1983-84, however, the 29 women teachers represented 19.6% of the post-secondary level teachers, a percentage equivalent to the percentage of women faculty in the universities.

Coordination

Subsequent to the White Paper on Economic Development of 1984, there was a reorganization of the government departments concerned with the delivery of occupational education. The most significant changes involved the Department of Education and the Department of Labour.

TABLE 8
Numbers and Sex of Full-Time Teachers in Regional Vocational Schools and in Federally Defined Community Colleges 1977-78 to 1984-85

	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
R.V.S.								
Male	345	338	339	341	338	339	332	330
Female	84	88	91	87	90	83	81	88
Total	429	426	430	428	428	422	413	418
Technological Institutes and Hospital Schools								
Trade level								
Male	45	45	50	52	54	49	N/A	N/A
Female	1	1	1	1	1	1	N/A	N/A
Total	46	46	51	53	55	50	N/A	N/A
Post-Secondary Level								
(Tech. Insts.)								
Male	125	134	138	137	145	109	119	N/A
Female	24	25	26	28	29	27	29	N/A
Total	149	159	164	165	174	136	148	N/A
(Hosp. Schools)								
Male	0	0	0	0	0	0	0	N/A
Female	108	105	107	108	117	118	116	N/A
Total	108	105	107	108	117	118	116	N/A
Total Post-Secondary Level								
Male	125	134	138	137	145	109	119	N/A
Female	132	130	133	136	146	145	145	N/A
Total	257	264	271	273	291	254	264	N/A

Observations
1. Figures exclude Canadian Coast Guard College and N.S. Teachers College.
2. Figures from 1982-83 onwards exclude N.S. Agricultural College.
3. Figures for Technological Institutes and Hospital Schools include academic administrators, but not senior or institutional administrators.

Sources: RVS: N.S. Department of Education. Technological Institutes and Hospital Schools: Statistics Canada, Catalogues 81-220, 81-229, 81-254, 81-569.

(a) Department of Education, Vocational and Technical Training Subdepartment

In the Department of Education, the Vocational and Technical Training division was removed from the supervision of the Deputy Minister of Education and given its own Deputy Minister of Vocational and Technical Training, responsible directly to the Minister of Education. Reporting to the new Deputy Minister are two Executive Directors, one for Programmes and one for Finance and Administration. In turn, four Regional Directors report to the Executive Director of Programmes.

There are four regions: Cape Breton, Metro, Northern and Valley/South Shore. Within each, the Regional Director is responsible for the coordination of occupational education offered in the provincially-operated regional vocational schools and the technological institutes. It is planned, moreover, to have an industrial liaison officer in each region to improve communication with industry in that region concerning the occupational education courses and facilities available in the region. The liaison officer will also seek the participation of the private sector in occupational education, especially in cooperative education programmes.

The Vocational and Technical Training subdepartment is currently assessing its aims and objectives and plans to study the coordination of occupational education on a province-wide basis. This study will involve assessments of the equipment and expertise available, of the qualifications and occupational specializations required in new instructors, and of the vocational and technical programmes offered. The goal is ultimately to rationalize the types of programmes offered throughout the system.

(b) Department of Labour and Manpower, Manpower Subdepartment

In assessing the occupational education needs of the province the Vocational and Technical Training subdepartment is expected to work closely with the new Manpower subdepartment in the Department of Labour and Manpower. The objectives of the Manpower subdepartment are to establish and develop a labour market and human resources needs identification system, an appropriate planning system that identifies and promotes those activities required to alleviate the identified needs, and a youth initiatives programme to cope with the problems of youth unemployment. To meet these objectives, there are four divisions.

- Human Resources Planning and Evaluation assesses current and future labour market supply and demand in the province;
- Human Resources Programme Development develops and administers industry-based training programmes, including the apprenticeship system, besides identifying, administering and evaluating trade skill standards; and

- Youth Initiatives, as mentioned in a previous chapter, is concerned with establishing a career guidance programme and generally promoting youth employment.

The fourth division,

- Human Resources Programme Operations, is concerned principally with negotiating training agreements with the federal government which, because it provides much of the funding, is an important element in occupational education in this province.

(c) Canada Employment and Immigration Commission

The Canada Employment and Immigration Commission, to meet its objective of enhancing the number of trained and skilled tradespeople in Canada, provides funding through the National Training Programme. The National Training Programme finances training both in occupational education and in the workplace. Pursuant to the Canada-Nova Scotia Training Agreement, institutional training to be funded by the CEIC is coordinated by the joint federal-provincial Labour Market Needs Committee which acts on the advice of its Institutional Training Sub-committee. Representatives of Manpower and Vocational and Technical Training sit on both committees.

To put the operation of the committee system in a nutshell, the federal government annually identifies those training programmes that it wishes to fund and there is consultation to determine how and where the provincially operated occupational education system will provide them. Federal funds are transferred to the Department of Labour and Manpower, which disburses them in payment for courses delivered by the Vocational and Technical Training sub-department and other provincial departments, such as Fisheries and Agriculture, concerned with providing occupational education. The extent to which these arrangements will be altered by the new federal Canadian Jobs Strategy, announced on 28 June 1985, is as yet unclear. As seen from Table 9, funding of institutional programmes is expected to decline slightly, but the 1985-86 figures are not final.

Training in the workplace, which may also include short study periods in occupational educational institutions, is coordinated by the Industrial Training Subcommittee of the Labour Market Needs Committee. In this case, industries come to agreements directly with the CEIC concerning the nature and financing of the training programmes. While it is evident that the Canadian Jobs Strategy intends to lay much greater stress on training in the workplace in the future, the exact effect of this new emphasis cannot be predicted. At least two of the six new programmes, Skill Investment and Skill Shortages, bear a marked similarity to the old General Industrial Training and Critical Trade Skills Training programmes, respectively.

TABLE 9
CEIC Expenditures on Industrial and Institutional Training in Nova Scotia
1977-78 to 1985-86

	Purchase	Institutional Allowance	UI[a]	Institutional Total	Industrial/ Gen. Indus.	Critical Trade Skills	Training Improvement	Skills Growth Fund	Total Industrial	Grand Total
1977-78	13,419,000	9,719,770	660,000	23,798,770	5,013,109	—	344,999	—	5,358,108	29,156,878
1978-79	13,419,000	6,082,157	3,695,210	23,196,367	5,358,998	—	206,036	—	5,565,034	28,761,401
1979-80	13,519,030	4,215,376	4,962,960	22,697,366	5,887,741	7,680	—	—	5,895,421	28,592,787
1980-81	15,062,000	4,874,917	5,713,444	25,650,361	6,063,289	182,164	—	—	6,245,453	31,895,814
1981-82	16,656,660	5,400,449	6,624,000	28,681,109	5,652,868	525,002	—	—	6,177,870	34,858,979
1982-83	18,138,000	5,151,655	7,648,256	30,937,911	4,662,250	658,742	—	1,419,543	6,740,535	37,678,446
1983-84	19,183,456	4,712,933	6,930,361	30,826,750	5,102,524	671,240	—	1,050,002	5,773,764	37,650,516
1984-85[b]	20,438,528	5,223,000	7,842,000	33,503,528	5,035,000	1,783,000	—	4,283,000	11,101,000	44,604,528
1985-86[c]	19,054,000	3,652,000	N/A	N/A	998,000	7,022	—	N/A	N/A	N/A

Notes
a: Includes CMTP and NITP UI expenditures only, except for 1977-78
b: estimates
c: projections — General Industrial and Critical Trade Skills figures represent sums allotted to programmes being terminated.

Source: CEIC, *Annual Statistical Bulletins*, 1977-78 to 1983-84; CEIC estimates and projections, 1984-85 and 1985-86.

Funding

The financing of the occupational educational system is somewhat more complex than that of the university system since occupational education spans both secondary and post-secondary levels. Courses or parts of courses which are considered by the Department of Education to be below the Grade XII level are deemed secondary, while those at Grade XII level and above are deemed post-secondary. Secondary education is funded by the province and the municipalities; post-secondary education is, of course, funded jointly by the province and, through Established Programmes Financing, the federal government. Through the National Institutional Training Programme and other funds, the federal government also finances occupational education at both the vocational and technical levels.

Introductory occupational education provided by the high schools below Grade XII is funded entirely by the province and the municipalities. The province is, however, assisted by EPF money in the funding of high school occupational courses at the Grade XII level. In this case the EPF grant is put toward the province's formula-based share of high school financing.

In 1983-84 the province also received assistance from EPF in funding the post-secondary courses in the fourteen vocational schools. The Department of Education determined that in that year 42% of all vocational school operating and capital expenditures were occasioned by courses and parts of courses at the post-secondary level.

The post-secondary portion of operating and capital expenditures of the technological institutes administered by the Department of Education is calculated by applying the proportion of the total number of training days represented by days spent training direct entry students to the total net expenditures. (The total training days include those allocated to CEIC trainees in apprenticeship and adult occupational programmes.) At NSIT the proportion so calculated is about 50%, at the Nautical Institute, about 30%.

In 1983-84 total provincial post-secondary expenditures on vocational schools and technological institutes were $17,296,000, an increase over the $10,297,000 spent in 1979-80. In real terms, deflated by the Canadian Consumer Price Index using the annual averages for the fiscal year with June 1981 = 100, this represents an increase of 16.7%. According to provincial calculations, in 1983-84, federal contributions to post-secondary education in Nova Scotia represented 64.7% of total expenditures, so that federal assistance through EPF to vocational schools and technological institutes can be estimated to be about $11,200,000 (in real terms, an increase of 4.6% over 1979-80).

A more complete picture of provincial expenditures on occupational education may be seen in Table 10. While expenditures on Regional Vocational Schools and AVTCs have increased appreciably in current dollars, since 1979-80 they have remained almost steady in terms of constant 1981 dollars. Thus, while expenditures on regional vocational schools increased

TABLE 10
Provincial Government Expenditures and Recoveries on Occupational Education, Nova Scotia
1979-80 to 1983-84

A **Expenditures**	**1979-80**	**1980-81**	**1981-82**	**1982-83**	**1983-84**
Admin.[a]	1,838,930	2,134,081	3,650,010	3,374,630	1,809,170
Resource Programmes[b]	—	—	210,709	—	—
RVS	16,172,515	18,150,380	20,329,571	21,939,650	23,614,313
Field Services	1,207,617	1,212,007	920,888	645,180	—
AVTC[c]	6,519,681	7,518,504	7,946,685	8,234,510	4,979,074
Modules	—	—	—	—	4,545,615
NSIT	3,461,446	3,823,845	5,086,826	5,268,430	5,179,960
NSLSI	573,229	770,207	1,044,736	1,263,564	1,016,318
NSNI	828,095	860,296	1,095,579	1,348,374	1,610,124
Disabled Training	558,308	570,483	692,053	928,125	840,327
Total Operating Expenditures	31,159,821	35,039,803	40,977,057	43,002,463	43,594,901
Capital Expenditures	1,320,788	1,398,131	2,654,524	2,808,531	1,280,694
Total Expenditures	32,480,609	36,437,934	43,631,581	45,810,994	44,875,595

B **Recoveries**	**1979-80**	**1980-81**	**1981-82**	**1982-83**	**1983-84**
Ordinary					
Various Prov. Recoveries	74,246	111,365	92,153	172,752	119,456
Cdn. Armed Forces	—	—	—	92,400	—
CEIC	11,642,895	13,636,256	14,664,719	15,496,632	16,675,731
CEIC/DOF	13,794	—	—	—	—
CEIC/MPHEC	—	605,685	598,666	1,250,912	—
MPHEC	573,229	—	—	—	—
Health and Welfare	287,420	260,042	221,918	542,822	299,690
	12,591,584	14,613,348	15,577,456	17,555,518	17,094,877
Capital					
Govt. of Canada	—	—	74,083	—	—
Total Recoveries	12,591,584	14,613,348	15,651,539	17,555,518	17,094,877
DOE Expenditure on Occupational Education	19,889,025	21,824,586	27,960,042	28,255,476	27,780,718
Less					
EPF Funding of PSE	7,432,375[d]	9,167,867[d]	9,885,235[d]	10,578,032[d]	11,188,782
Total DOE Expenditures	12,456,650	12,656,719	18,094,807	17,677,444	16,591,936

Notes
a Includes Programme Services and Training Operations Administration, 1979-80 to 1982-83.
b Now included in budgets of AVTCs and technological institutes.
c Includes modules until 1983-84.
d Does not discount EPF funding component of MPHEC recoveries.

Observations
1. Excludes expenditures on Springhill Training Centre and recoveries from the Solicitor-General of Canada therefor; and excludes expenditures on Provincial Language Training Unit and recoveries from the Secretary of State and provincial departments therefor.
2. Includes only expenditures and recoveries listed under Adult Education and Regional Vocational Education budget units until 1982-83, and under Vocational and Technical Training budget unit from 1983-84. District Vocational School Expenditures and recoveries are therefore excluded.
3. Excludes occupational-related expenditures and recoveries in Student Aid, Teachers' Pensions and Financial Management budget units.

Sources: N. S. House of Assembly. *Estimates of the Government of Nova Scotia*; N.S. Department of Education.

from $16,172,515 in 1979-80 to $23,614,313 in 1983-84, a rise of 46.0% in current dollars, they increased only 1.5% in real terms. Similarly, while expenditures on AVTCs and modules rose from $6,519,681 in 1979-80 to $9,524,689 in 1983-84, or 46.1% in current dollars, the increase represents a rise of only 1.5% in real terms. The low real increase corresponds to the declining enrolments in these institutions.

On the other hand, expenditures on the technological institutes have increased in response to increasing enrolments. Between 1979-80 and 1983-84 expenditures on the three provincially operated technological institutes rose from $4,862,770 to $7,806,402, a spectacular increase of 60.5% in current dollars and a more modest, but still appreciable, increase of 11.6% in constant dollars.

Generally speaking, funding per occupational student also increased during the years 1979-80 to 1983-84. Using enrolment figures from Table 3, it may be seen that during those years, expenditures per regional vocational student rose from $3,332 to $4,959. In constant dollar terms this represents an increase of 3.5%. The average cost per student at both regional and district vocational schools in 1984-85 was $5,503 (see Table 11). Expenditures per student in the AVTCs, modules and technological institutes are more difficult to calculate because only a minority of students (except at the Land Survey Institute) are full-time, but indications are that expenditures per student also rose in current and constant terms during the period. At the Land Survey Institute, expenditures per FTE student rose from $5,790 in 1979-80 to $8,994 in 1983-84, an increase of 8.0% in constant terms.

Federal assistance to occupational education goes beyond the EPF grant. As was mentioned above, the Canada Employment and Immigration Commission purchases blocks of training places at the vocational schools and technological institutes and also supports training modules as part of the National Training Programme. In 1983-84, as shown in Table 9, the CEIC support for institutionally delivered occupational training courses in Nova Scotia totalled $19,183,456. In addition, the CEIC paid unemployed persons in training courses $6,930,361 in unemployment insurance and a further $4,712,933 in living allowances to those ineligible for unemployment insurance, making a grand total of $30,826,750 for CEIC support to institutional occupational education.

Those occupational education institutions with which this chapter has been most concerned, namely those administered by the provincial Department of Education, received the greatest part of the CEIC funds allotted to institutional training programmes. Table 10, Section B, shows that $16,675,731 of the $19,183,456 spent in 1983-84 went to the regional vocational schools, AVTCs, training modules and technological institutes.

In the same year, the Department of Education spent about $44,875,595 on occupational education (observations and notes to Table 10 indicate why these final calculations should be regarded only as very close approximations). Adding the $16,675,731 received from the CEIC to other recoveries

TABLE 11
Enrolments and Cost per Student at Vocational Schools
Nova Scotia, 1984-85

School	Enrolment	Gross Operating and Capital Expenditure (Forecast)	Cost Per Student
Annapolis	362	2,164,200	5,978
Burridge	332	2,062,000	6,211
Canso	421	2,734,500	6,495
Cape Breton	526	2,560,700	4,868
Colchester	351	2,296,365	6,542
Cumberland	171	1,325,200	7,750
Dartmouth	954	5,720,400	5,996
Halifax	541	2,648,500	4,896
Hants	208	1,212,600	5,830
Kings	561	2,915,797	5,197
Lunenburg	391	2,307,900	5,903
Memorial	458	1,235,666	2,698
Pictou	395	1,942,600	4,918
Shelburne	138	840,800	6,093
Total	5,809	31,967,228	5,503

Observations: Discrepancy in total enrolment from Table 3 due to differences between the 1984-85 Vocational Programmes Survey enrolment figures used here and those taken at other times during the year. Kings enrolment excludes 84 'vocational-equivalent' students in general and other courses.

Sources: Nova Scotia Department of Education, *Directory of Schools in Operation, 1984-85; 1984-85 Vocational Programmes Survey;* and School Grants records. Nova Scotia House of Assembly, *Estimates of the Government of Nova Scotia for the Fiscal Year 1985-86.*

and less chargeables from various sources, it may be seen from Table 10, Section B, that recoveries totaled $17,094,877. Further subtracting EPF funding of post-secondary occupational education, namely some $11,188,782, it will be seen that the Department of Education expended $16,591,936 of provincial funds on occupational education in 1983-84. This may be compared with a total of some $43,471,000 spent on the universities in the same year.

Net provincial funding of the occupational system increased from $12,456,650 in 1979-80 to $16,591,936, an increase of 33.2% in current terms. In constant dollar terms, however, funding declined by 7.4%.

Similarly gross funding of the provincial occupational system increased from $32,480,609 in 1979-80 to $44,875,595 in 1983-84. In current dollar terms, this represents an increase of 38.2%; in constant dollars, however, it is a decline of 4.0%.

II. Problems Confronting Occupational Education

As identified in the hearings, the problems of the occupational education system fall under three main headings: lack of prestige, lack of responsiveness to the needs of industry and the job market, and a lack of coordination and clear systemic purpose.

Many of the specific problems identified in the hearings were considered in the White Paper on Economic Development, which appeared in February 1984 while the Commission's hearings were still in progress. Consequently, as mentioned above, policy is already being developed or action is being taken to deal with the difficulties, especially in matters of coordination and responsiveness to the needs of industry and the job market. The following description and discussion of problems related to occupational education will therefore be to some extent a matter of record, to identify the issues that were of concern to employers and employees in Nova Scotia. The Commission wishes thereby to stress the importance of the continuing review of the structures and methods of occupational education in this province and to promote the work already being done. It is hoped that the Commission's recommendations based on consideration of the public's concerns will assist those now entrusted with reviewing and improving the occupational education system.

Lack of Prestige

Various groups mentioned that students were not attracted to occupational education, even at its higher levels, because it was perceived as inferior in status to university education. The reason for this perception would seem to be the correlation in the public mind of the positions of wealth and authority enjoyed by physicians, lawyers and engineers with the university education members of those groups experienced; and conversely, the correlation of the lower paid, subordinate positions of some technicians and skilled tradespeople with their occupational education. The problem has no easy solution for, as can be seen, it originates from the values and rewards our society assigns to distinct occupations and there are as yet few signs of change in that system of values. Signs of change do exist, however. By no means all university graduates are in positions of authority, and many are less well paid than tradespeople: there is no longer an absolute correlation between a university education and a higher salary. Statistics Canada 'data show that a diploma or degree may not lead to a higher salary, and that many trade and service occupations pay better than office work.'[3] Furthermore, and more important, the continued economic well-being of our society depends on the existence of well-trained technicians and tradespeople; there is an increasing realization that they and their skills are essential for economic development.

The Commission believes that to enhance the prestige of occupational education, it must be regarded as a worthwhile education in its own right, not as a poor cousin whose prestige is somehow enhanced through association with academic education. The transfer of certain fundamentally occupational education courses to degree programmes in the universities has not aided the cause of either university or occupational education. The needs of occupational programmes are unlike those of academic programmes. The goal of occupational education is to improve the practical skills and techniques of its graduates. Occupational courses do not usually involve social criticism and, while the perfection of technique and technical innovation are of high concern to instructors, the concept of free inquiry and thus of academic freedom is not integral to occupational education.[4] The effect of transferring occupational programmes to the universities has been to create uncertainty concerning the purpose of a university education, and the debasement of the liberal arts and science core, which was the unique feature of a university education. On the other hand, there has been a simultaneous lowering of public esteem for the educational institutions dedicated specifically to occupational training. When career courses are offered at both occupational education institutions and at universities, the public seems to think that because the courses at university lead to a degree, the courses taken at the other institutions must be inferior.

In other jurisdictions the problem has not been so marked, because of the existence of formally designated community colleges, the excellence of whose career programmes is recognized by the public. In those jurisdictions, the nature and importance of advanced occupational education are clearly perceived. Since there are no designated community colleges in Nova Scotia (the term as used in this province is merely a Statistics Canada construct), the business community tends to look to the universities, and not to the institutes of technology, to do their work.

At the root of the problem is a widespread lack of knowledge of the distinct levels at which occupational courses are taught. The fact that most occupational courses in high school and the vocational schools are directed toward less academically inclined students has tended to prevent the realization that some of the occupational courses in the vocational schools and most courses in the institutes of technology require mental skills of the same level if not necessarily the same kind as those required for academic subjects. The delivery of courses of the same name but with very different prerequisites at the various vocational schools has likewise tended to obscure the fact that the courses may require and lead to very different levels of attainment.

Any solution to the problem must rest on an enhancement of the public's perception and comprehension both of the nature and importance of occupational education and of the function of the various institutions within the occupational education system. Greater efforts must be made to publicize the types and levels of occupational education available and the institutions at which they are available.

For the benefit of students of different aptitudes, different types and levels of occupational education must continue to exist. It is essential that places continue to be provided at the introductory and vocational levels, in order that the less academically inclined students may receive training that will facilitate their entry into the workforce. At the same time, the quality of technical education in the institutes of technology must not be obscured by unnecessary competition in occupational education from the universities. As recommended in Chapter 2, occupational courses in universities should be clearly identified and should not lead to a baccalaureate unless the occupational courses are studied in conjunction with the core curriculum.

Lack of Responsiveness to Industrial and Job Market Needs

All official bodies — the Royal Commission, the Provincial Manpower Board and Voluntary Planning — that have investigated the occupational education system during the first years of the 1980s have heard much the same complaints concerning the system's uncertain record of responsiveness to the needs of industry in this province. While hardly any complaints are heard about the institutes of technology, there is considerably less satisfaction with the vocational schools and remarks about occupational education in the high schools are generally uncomplimentary.

Much of the evidence is, however, anecdotal, and it is dangerous to assume that the manpower needs of industry are all the same: the vast range of different types of industries requiring different types of skills, and the diversity of production methods even within the same industrial sector, mean that training found acceptable by one firm may be unacceptable to another. There was, for instance, a general complaint that many of the graduates of vocational schools had been taught to operate out-of-date equipment and therefore had to be retrained to operate newer equipment on the shop floor. Some firms, however, stated that graduates had learned their skills on state-of-the-art equipment and therefore took time to adjust to the older equipment actually used by the firms.

Clearly, a necessity is a firm-by-firm, sector-by-sector survey of the industries in the province to determine what skills are required by each firm and each sector. This will require private sector cooperation to be effective, and in particular a greater stress on manpower planning than now exists in most firms. Where a manpower component is now included in a firm's operation plans, the manpower plan tends to be short term and focused on lower skill requirements. The provincial manpower survey indicated that only one third of the firms interviewed performed manpower forecasts regularly. Moreover, the 1980 Management Training Survey indicated that of 330 Nova Scotian firms interviewed, only 51% had established or written personnel policies and procedures.[5] It is self-evident that before occupational

education can respond adequately to the personnel needs of industry, industry must first of all decide what those needs are and provide sufficient information about them to enable action to be taken to train a sufficient number of people in the procedures and skills required. Otherwise, not only will firms in this province find themselves faced with manpower shortages, but many people will find it increasingly difficult to take complaints about the occupational education system's lack of responsiveness to industrial needs seriously.

As a counterpart to the survey of skills required, the Commission sees value in the preparation of a skills inventory in order to determine what skills are already held by the working population of the province. While a province-wide skills inventory survey would be more difficult to undertake than the survey of skills required, local skills inventories could be compiled by the development commissions for the various areas of the province whose economic growth these commissions are intended to promote. Skills inventories would enable firms to determine suitable locations for new plants, and would also assist planning of the occupational education curriculum. There seems little point in creating or maintaining occupational courses in a particular trade if the province already has a sufficient number of unemployed or underemployed people who are skilled in that trade.

While recognizing that some of the comments concerning occupational education require greater statistical documentation, the Commission wishes to record that the most frequent complaints it heard regarding lack of responsiveness of the occupational education system to the needs of industry were the following:

Complaint (i): Courses are taught on out-of-date equipment, employing out-of-date methods.

This complaint most commonly referred to welding courses, where dated oxyacetylene welding methods were taught in the vocational schools for several years after industry had moved on to more advanced welding methods. How serious the problem is in other industries is unclear; the Voluntary Planning Survey of industry's attitudes to occupational education in 1978-79 found 'general agreement that equipment used for training compared *very well* to *fairly well* with that used on the job site'. Whether this situation has changed significantly in the past few years could be revealed by a study of types of equipment used most commonly on a particular job as compared to the types of equipment used to teach courses in the skills required for that job.

Complaint (ii): Instructors are not sufficiently aware of the latest methods employed by industry.

Complaint (iii): Vocational schools and instructors have insufficient contact with industry.

Complaint (iv): Occupational education students have insufficient experience in a work environment related to their course of studies.

Complaint (v): The Trades Advisory Committees, which are meant to advise vocational schools on developments in the various trades, have not functioned well.

All the preceding complaints betoken inadequate communication between the occupational education system and the private sector that occupational education is intended to serve. Steps are evidently being taken to remedy this lack of communication by, for example, the appointment of regional liaison officers, but those entrusted with this task should consider various solutions to the problem proposed by groups and individuals during the Commission's hearings and deliberations. The suggestions which the Commission recommends should be taken into account when plans are being made for revising the delivery of occupational education are discussed below.

While the appointment of industry liaison officers will obviously give the occupational education system a better knowledge of industrial needs, consideration should be given to helping instructors to obtain knowledge of the latest developments in work practices in their field. Arrangements could be made to enable instructors to receive education towards upgrading their skills. Apart from attending formal courses, instructors should be able to spend regular periods on the job becoming acquainted with new techniques. Efforts should be made to permit practising tradespeople to teach their skills to students (and instructors) in the vocational schools. Successful implementation of these suggestions would depend on the goodwill of both employers and unions; one of the roles of the regional liaison officers could be to negotiate training arrangements with the unions concerned.

Cooperative education, whereby students in a particular trade are enabled to spend time actually practising it in a work environment, seems to enjoy general support among employers in the province. Training programmes involving cooperative education are currently provided at Mount Saint Vincent, Dalhousie and the Technical University, and the University College of Cape Breton has recently received a grant to expand its cooperative programmes. Problems encountered in the Nova Scotian industrial environment are the small size of many firms, which makes it difficult for them to take on even temporary staff, and the high level of unemployment, which means that giving a student a job may take that job away from a trained worker. Cooperative education would thus seem to be another area where an intensive assessment of the positions open for temporary staff must be followed by negotiations with both employers and unions concerned.

Since cooperative education is in many ways a variation on apprenticeship training, those concerned with extending cooperative education could benefit from studying the experience of apprenticeship in the province. Apprenticeship programmes have not been altogether successful in Nova Scotia, and the

number of registered apprentices is small. In 1983-84, 2,399 people began apprenticeship training. A serious problem for apprentices in Canada generally, as opposed to apprentices in European countries, is that they have little guarantee that they will be able to finish their programmes in the event of an economic recession. Apprentices, being frequently among the most recently hired workers, are usually among the first to suffer from layoffs. Their vulnerability to such dislocations is increased by the length of most apprenticeship programmes — about four years. In France, shorter programmes have been developed and they are being considered in other European countries. It may be that eventually some apprenticeship programmes will emerge that resemble cooperative education in the balance of time allotted to class work and to work on the job. Certainly a study of the present functioning, and options for the future development, of the apprenticeship system in Nova Scotia is a necessity.

There is a general consensus that, though a few of the Trades Advisory Committees in the vocational schools are fulfilling their intended role, most are not. These committees are intended to provide outside advice concerning specific occupational programmes in the vocational schools, but some programmes in some schools lack advisory committees, and the record of those that do exist is uneven. Some meet three times a year, others only once. Some act in close contact with trades instructors, others do not. A thorough organizational overhaul of the committee structure is clearly indicated.

> **Complaint (vi):** Vocational schools do not operate all year round, and make inadequate use of their facilities outside the period of the school day.

There are certain obvious advantages to continuous operation of the vocational schools. Continuous operation would permit delivery of courses of varying length, that is to say, courses whose length is determined by the time actually required to learn specific skills and techniques, rather than by a predetermined school year. Courses outside the regular school day could, furthermore, attract part-time students seeking to upgrade their qualifications. Graduation of students throughout the year would lead to less pressure on the job market in the summer, when university students may also be seeking temporary jobs in some trades for the vacation. Finally, a non-standardized year would enable schools to develop and deliver courses more quickly in response to short-term labour market demands.

On the other hand, continuous operation could be expected to increase costs, both in the replacement of equipment that would wear out more quickly, and in the payment of the expanded teaching staff that would be required. Before any movement is made toward continuous operation, a thorough study should be made of the possible expenses involved. In any case, continuous operation should not be introduced as if it were a panacea in itself for the ills of occupational education, but only in response to a

provincial manpower plan that identifies probable directions of labour market demand and the best educational means to meet them.

> **Complaint (vii):** Occupational courses should be evaluated in terms of their results, that is, according to their graduates' success in finding employment.

A yearly review of graduates' success in finding employment could be printed and distributed to career guidance counsellors. A review of the relative degrees of success enjoyed by graduates of occupational programmes in high school, graduates of vocational school, institutes of technology and occupational courses in university would be a valuable planning aid. Employed in conjunction with other labour market information, it would help prospective students to choose a suitable career and education. It would also permit those entrusted with coordinating the occupational education system to assess the most effective institutional means of providing occupational education in the province.

> **Complaint (viii):** Career guidance counsellors have stressed academic education at the expense of vocational and technical education.

The Youth Initiatives Division in the Department of Labour and Manpower would seem to be developing suitable programmes to improve counsellors' knowledge of occupational education. As mentioned in Chapter 2, expansion of the division's responsibilities to include adults would further disseminate knowledge of occupational education throughout the population. Establishment of occupational education as a form of education clearly differentiated from academic, and leading to distinct qualifications in the form of certificates and diplomas, would also dispose counsellors no less than prospective students to consider occupational rather than academic education. At present, the choice of options is not clear, because so many occupational courses are delivered in universities, and are confused with academic education.

As was noted above, most women in the occupational system study traditionally feminine occupational subjects. The Commission feels that counsellors should encourage women to consider non-traditional subjects offered in the occupational system. The attractiveness of such courses to women could well be increased if there were larger numbers of qualified women on the occupational teaching staffs or on the Trades Advisory Committees.

A specific problem that has caused the Commission great concern relates to the technical and vocational training of deaf students at the Atlantic Technical Vocational Centre (ATVC) in Amherst.

> **Complaint (ix):** The limitation of occupational training at ATVC to a 24-month period restricts the career choices available to deaf people.

The limitation is due to the funding formula under which ATVC operates. Its effect, however, is that once a student chooses a training programme he or

she does not have the option of changing programmes, since the time spent in the first training programme is deducted from the time allowed in the student's second programme choice. Because students must leave the occupational training programme after 24 months have elapsed, regardless of their progress in the course, it is apparently not uncommon to find deaf persons with skills in two occupational areas but insufficient training to secure employment in either occupation. The Commission recommends that a thorough study be made of the occupational education programme and funding arrangements at ATVC with a view to ensuring that training is responsive to deaf people's needs. It may be that the courses should be regarded as pre-occupational rather than occupational training, though it is to be noted that the data entry course seems to have been remarkably successful in turning out skilled and employable graduates.

Apart from the concerns expressed by groups and individuals at the hearings that the occupational education system was not meeting specific industrial needs, there was the further concern:

> **Complaint (x):** The system is not producing sufficient graduates with the skills required to meet the changing demands of the labour market.

The fundamental means of projecting future labour market demand is the Canadian Occupational Projection System (COPS), operated by the CEIC. This system employs a model of the Canadian economy and projects various development scenarios for some ten years to come. Then, assuming that the distribution of occupations among industries, that is, economic sectors, remains as it was in a base year (usually the census year), it projects changes in the demand for each occupation over the period, according to the development scenario considered. The approach thus assumes that changes in the industrial structure determine future occupational requirements.

As its modellers readily admit, the system provides at best an approximation to future occupational needs. They point out that the system still inadequately reflects the influence of technological change and work organization on the demand for specific skills in specific industries. The figures obtained are, furthermore, national in scope, not reflecting regional differences, and do not represent the occupational demands of industry arising from attrition. A study undertaken for the Royal Commission also pointed out that though the COPS model is couched in terms of occupational supply and demand, these two sides of the market are not allowed to interact in the usual economic manner so that projected situations of excess demand in a particular market would cause a rise in relative wages while situations of excess supply in a particular market would cause a fall in relative wages, with consequent effect on labour flows.

The Commission's study concluded that COPS projections cannot be used as the exclusive basis for making occupational education decisions; and indeed it should be emphasized that the COPS modellers have never intended that their results be so used. Any figures obtained must be

considered in relation to the provincial labour market information generated by the Planning and Evaluation Division of the subdepartment of Manpower. This information takes rates of attrition and other provincial and regional data into account. Even so, apart from a few occupations, the state of labour market projections is such that they can be used only as general guides to occupational developments, indicating in a general way what sorts of occupational courses might be stressed and what sorts might be de-emphasized in coming years.

The very few occupations for which demand projections may have a high degree of accuracy are those concentrated in a specific branch of industry. If the occupation in question requires an educational programme, the flow of matriculating students may be adjusted to meet future needs. Occupations of this type are medicine, dentistry, teaching and law. As can be seen, these occupations tend to be of a professional nature. Many of the concentrated occupations, however, are in industries where on-the-job, rather than institutional, training is the rule, such as fishing, forestry and textile processing. Alterations in institutional occupational education will not greatly affect labour flows in these industries which are governed primarily by the laws of the market. For most occupations, then, changes to the institutional delivery of occupational education should not be based directly upon the results of projections.

While long-term planning in the occupational education system must not be neglected, there are concerns of higher priority. These are the production of graduates with transferable job skills, and enhanced flexibility of the systemic response to short-term labour market demands. To produce graduates with transferable job skills, the system must start with students who want transferable job skills, and that means changes in the curriculum of the secondary school system preparatory to occupational training at any level. As the *Economist* observed recently:*

> Children . . . . should be made to think, and told how to demand as many skills as they can get. That means more general education, earlier, not more technical training which they have not been educated to want or absorb.

That means, in a Nova Scotian context, a core curriculum in the secondary schools. To ensure a higher quality of student in vocational level programmes, the study of mathematics should be compulsory in junior high school to Grade IX. Consideration might also be given to emulating the Japanese education system, where high levels of attainment are expected of even elementary students. To broaden the horizons of technical level students, a core curriculum should be introduced in the senior high schools not only for university preparatory but also for leaving certificate students. All senior high school students should experience a curriculum including mathematics, English, a science, a social science and a language, all taught to a rigorous standard. They should also receive liberal exposure to the arts.

One of the few criticisms that can be made of the technological institutes is that their entrance requirements, while more specific than those of the universities, admit matriculants who may not have been exposed to any but scientific subjects (apart from English) since Grade X.

In the occupational education system itself, especially in the vocational schools, consideration should be given to the introduction of training modules that provide a core of skills which can be transferred to a variety of different occupations. Some vocational schools already have programmes similar to this, but do not emphasize the transferability of the skills taught or prepare the students to market the skills they have learned. Nova Scotian schools could learn from Holland College, in Prince Edward Island, which facilitates its graduates' entry to the job market. Its certification diplomas list the skills the student has attained or the tasks he or she has performed, and provide space for employers to note additional or higher levels of skills attained on the job after graduation. It should be added that ever higher levels of literacy and numeracy will be required with the expansion of a computerized knowledge-based economy. Hence the transferable-skill training modules, and indeed, other programmes, in the vocational schools should require improved levels of competency in English and mathematics and provide remedial courses if necessary.

Systematic response to short-term fluctuations in demand in the job market is best assured by concentrating the delivery of occupational education in the vocational schools and technological institutes, rather than in the universities. Flexible and, as suggested above, continuous operation is more possible in the non-academic institutions, and consequently course modules of variable lengths can be developed and delivered more quickly and easily in them than in the universities. In any event, the one-to-two-year programmes in the vocational schools and technological institutes assure a more rapid response to new labour market demands than three-to-four-year programmes in the universities.

Finally, the policy of restricting vocational school courses to students under the age of 21 should be reviewed with a view to opening these courses to adults as well. With a declining population of 15- to 19-year-olds, it is foreseeable that these institutions will become even more underutilized than they are now. Excess capacity in the vocational schools is not acceptable at a time when there is an increasing need for persons of all ages to undergo upgrading and retraining in order to obtain new or more advanced skills required by the rapidly changing information-based economy. The Commission believes that courses in the vocational schools could be opened to both young people and adults or else more courses for adults only could be delivered using the school facilities.

Dispersal of Effort

Almost all the groups and individuals who appeared at the hearings to speak to the subject of occupational education emphasized the need for effective coordination of the occupational education system. Clear direction from a central authority was perceived to be essential if the variety of occupational programmes in the high schools, vocational schools, technological institutes and even the universities were to be coordinated. Recommendations were that occupational education be coordinated by a separate department or by a subdepartment in the Department of Education. Since the hearings, in response to the White Paper, the government created the subdepartment of Vocational and Technical Training, in the Department of Education, and the subdepartment of Manpower, in the Department of Labour and Manpower, with responsibilities described above.

(a) Need for New Department of Manpower and Occupational Education

The Commission supports the concept of centralization of authority for occupational education. This authority is suitably lodged in a government department, for occupational education does not require the same safeguards of academic freedom as are necessary in a university and which compel coordinating authority for universities to be lodged in an intermediary body. The Commission also believes that the creation of two subdepartments, one entrusted with identifying labour market needs, and the other with providing education to meet those needs, is a step in the right direction. It is the Commission's considered opinion, however, that departmental coordination must be carried a step further, to the creation of a new Department of Manpower and Occupational Education, if coordination of the occupational education system is to be truly effective.

The principal reason for making this recommendation is the perception that the two present subdepartments will be able to coordinate their efforts more effectively if they are both under one roof, in one department, rather than physically separated, as now, in two different departments. Being in different departments, the subdepartments are responsible to different ministers and consequently subject to different departmental priorities. If the departmental priorities conflict, there is likely to be a lack of coordination between the activities of the two subdepartments, to the detriment of the coordination of occupational education.

Separation of the two subdepartments means, furthermore, that most contacts between the staff of the subdepartments must go through formal or, at least, quasi-formal channels. Currently members of one subdepartment must request information from the other subdepartment in a different building, rather than having the information readily available for consultation in the same building. In a field that requires such intimate knowledge of the variety of industrial and labour market needs and such intimate knowledge of the many different occupational education programmes and

institutions to be effective, restriction of contacts between the staff entrusted with identifying needs and the staff entrusted with developing programmes to meet them is a distinct disadvantage. Continuation of a system of formal contacts imparts an element of rigidity to the government response to developments in labour market needs. If the staffs of the two subdepartments were both under one roof, however, the staff members would have a greater opportunity to exchange information informally and to develop responses to labour market needs without formal requests to do so. Finally, the Commission believes that both the subdepartment of Manpower and the subdepartment of Vocational and Technical Training do not have especially close institutional links with the other entities in the Department of Education and Labour and Manpower. Provided that some adjustments are made to assure continuation of those two links that do exist, the two subdepartments can be moved from their respective departments with a minimum of disruption.

The Commission accordingly recommends that the subdepartment of Manpower and the subdepartment of Vocational and Technical Training be removed from their present departments and amalgamated in a new Department of Manpower and Occupational Education.

The Commission is satisfied that the current structure and stated objectives of the subdepartments of Manpower and Vocational and Technical Training are appropriate to serve their respective purposes. It believes, however, that if the new Department of Manpower and Occupational Education is to be as well informed as possible about the labour market needs in the province, it must also be responsible for the provincial job-creation programmes. These programmes are currently administered by the Employment Opportunities Branch of the Department of Development, and create significant numbers of temporary jobs on a seasonal basis. In 1984 the Provincial Winter Employment Programme provided a total of 2,100 approved positions for a budgeted expenditure of $4.4 million; and the Summer Employment Program provided 6,000 approved positions for a budgeted expenditure of $14.5 million. The Branch also administers the Youth Entrepreneurial Skills (YES) programme that provides interest-free loans to youth wishing to start up a business for themselves.

It is evident that the planning and creation of these temporary jobs would be assisted by the participation of members of the subdepartments of Manpower and Vocational and Technical Training. There is, furthermore, the possibility that such participation would lead to the creation of jobs that would enable Nova Scotians to learn skills that are in short supply in the province. Recent CEIC discussion papers and the new Canadian Jobs Strategy have indicated an interest in promoting this form of on-the-job training. If this interest is translated into firm federal policy, the province will clearly be better served by the administration of the job-creation programme by the same department that identifies provincial skill shortages and that can assure that on-the-job training programmes are not duplicated by institu-

tional training programmes. The Commission accordingly recommends that the Employment Opportunities Branch be transferred to the new Department of Manpower and Occupational Education as a division directly responsible to the Deputy Minister.

Given the welcome creation of the Department of Human Resources Development and Training just as this report goes to press, the Commission hopes that the recommendations on occupational education found elsewhere in this chapter will be integrated into the new department's policy.

(b) Greater Coordination of Occupational Education Programmes

The current brief of the Vocational and Technical Education subdepartment is to coordinate occupational education delivered in the regional vocational school, adult vocational training centres, the provincially operated technological institutes and the training modules provided for CEIC. While this covers a wide range of occupational education institutions, it does not include the occupational courses offered in high schools and the universities. Obviously, there should be some means of assuring coordination of occupational education throughout the system, so as to avoid unnecessary duplication of courses.

The district vocational schools should become more directly responsible to the subdepartment of Vocational and Technical Training than they are now. Course outlines, proposals for new courses, proposed course enrolments and proposed employment of new instructors should be submitted to the Programme Support division for approval, so as to ensure that instruction is standardized and that enrolments and course offerings fit into the overall provincial occupational education plan, while still making due allowance for local needs.

The Commission believes that it should be the objective of the Vocational and Technical Training subdepartment to ensure that course rationalization and standardization occur within the Nova Scotian system of vocational schools and technological institutes. While a transferable-skills module would be a suitable core for all vocational schools, the need for all vocational schools to offer a core of similar courses in distinct trades requires examination. In a small province like Nova Scotia, specialization in certain forms of trades training at specific schools may well make more sense. There must also be a move towards standardization of entry requirements and course curricula across the vocational school system. To attain this standardization, a plan must first of all be drafted to allocate course offerings and the level of course offerings to be offered across the system. Thus certain schools would be assigned the responsibility for carpentry at technical level, others at vocational level, carpentry programmes at some schools would be phased out to enable the strengthening of programmes for which the school already had a reputation for quality, and so on. In undertaking this planning and resource allocation process, the subdepartment of Vocational and Technical Training should act along the lines recommended for the Council on Higher Education in Chapter 4.

Vocational and Technical Training should, furthermore, exercise a watching brief over the Industrial Arts and Business Education programmes in the high schools. The present curriculum consultants in Industrial Arts/Business Education and Intermediate Industrial/Work Experience could be assigned joint appointments in the Curriculum Development Division of the Department of Education (where they are now) and in the Programme Support Division of Vocational and Technical Training. These personnel in common would ensure awareness of Department of Education programmes in the Department of Manpower and Occupational Education, and vice-versa. Ultimate approval for course outlines, proposals for new courses, proposed course enrolments and staff development should, however, be transferred to the Programme Support Division of Vocational and Technical Training.

The subdepartment of Vocational and Technical Training should concern itself with liaison with the high schools in others ways also. It has recently come to the Commission's attention that the entrance requirements for the vocational schools are imperfectly known in the high schools (except in the areas of the amalgamated boards) and that this situation has, if anything, worsened since the division of the Department of Education into the subdepartments. Vocational and Technical Training should therefore make a special effort to publicize vocational entrance requirements in the high schools; close collaboration with the Guidance Consultant in the Department of Education and with the Youth Initiatives Programme in the subdepartment of Manpower is recommended.

(c) Liaison of Occupational Education System with University System

Coordination of occupational education courses taught in the universities cannot be undertaken in the same way as coordination of the courses currently taught in institutions operated by the Department of Education. University autonomy must be respected but, at the same time, some effort should be made to accommodate the provision of occupational education in the universities to the needs of the labour market and to prevent duplication of occupational courses in the universities and the technological institutes. The Commission believes that the most satisfactory means of meeting the needs of university autonomy and occupational education is to make the Deputy Minister of the new Department of Manpower and Occupational Education a non-voting member of the Council on Higher Education.

As a member of the Council, the Deputy Minister would be able to bring the needs and concerns of the occupational education system to the attention of the other members whose primary concern would be the academic system. In this way also university plans for occupational courses and the Council's reviews of existing occupational programmes in the universities would readily become known to the staff of the Department of Manpower and Occupational Education. Thus the plans, standards and enrolments of both the university and non-university occupational education programmes could

be adjusted to improve the institutional response to the needs of the labour market.

The Commission does not expect the concerns of the labour market to have undue weight in the Council's deliberations on programmes in the arts and sciences. Outside the faculties of Arts and Science, however, the concerns of the labour market must be given much greater weight. In fields such as education, physical education, secretarial arts, engineering, law and medicine, the employment opportunities for graduates in the province and the region must be considered before approval is given for the creation or continuation of programmes or for the increase, decrease, introduction, or abandonment of enrolment quotas. In making these decisions, the new Council including the Deputy Minister of Manpower and Occupational Education would have an advantage over the present MPHEC by having ready access to the Deputy Minister's staff who could provide information on labour market needs and existing non-university programmes.

(d) Liaison with Federal Government

The Commission expects that members of the Department of Manpower and Occupational Education will continue to serve on the federal-provincial Labour Market Needs Committee and its subcommittees. It would probably be advisable to maintain separate representation from the Manpower and Vocational and Technical Training subdepartments, but decisions can only be made once it is determined what is most convenient in practice.

Union of manpower and occupational education services in one department should strengthen the province's position in its relations with the CEIC. Such a department will not prove a novelty to the federal government, which is accustomed by now to working with departments uniting these responsibilities in jurisdictions across Canada. In Newfoundland, the Department of Career Development and Advanced Studies brought together the Manpower Branch of the Department of Labour and Manpower and the Advanced and Continuing Education Branch from the Department of Education. In Prince Edward Island, the Human Resource Development Division of the Department of Industry combines responsibility for manpower relations, adult education and job creation. In Saskatchewan, the Department of Advanced Education and Manpower combines the Manpower Division and the Advanced Education Division (which includes the occupational training branch and the university affairs branch). In the Northwest Territories, the Assistant Deputy Minister of Advanced Education in the Department of Education is responsible for 'labour market matters', including labour market information, while the Yukon Department of Education has an Advanced Education and Manpower Branch. From the above it may be seen that the combination of responsibility for manpower affairs, occupational education and job creation has an institutional coherence, and that by creating a Department of Manpower and Occupational Education Nova Scotia would be adopting a system that has been found acceptable in Newfoundland and Saskatchewan.

Recommendations

As a result of its deliberations concerning the problems confronting the occupational education system in Nova Scotia, the Commission recommends that:

- **Greater efforts must be made to enhance public perception and comprehension of the nature of occupational education and of the function of the various institutions within the occupational education system. The types and levels of occupational education should be given greater publicity.**

- **A firm-by-firm, sector-by-sector survey of the industries in the province should be undertaken to determine what skills are required by each firm and each sector.**

- **The development commissions, or other suitable agencies, should be encouraged to undertake skills inventories for their development areas.**

- **Studies should be undertaken to determine whether equipment used in occupational training courses is similar to equipment most commonly used on the job.**

- **Arrangements should be made to enable occupational instructors to attend formal upgrading courses and to spend regular periods on the job becoming acquainted with new techniques.**

- **Arrangements should be made to permit practising tradespeople to teach their skills to students and instructors in the vocational schools and other institutions of occupational education.**

- **Efforts should be made to extend cooperative education, though there should be a realistic assessment of the opportunities available for this form of work-study programme.**

- **A study should be undertaken of the present functioning, and options for the future development, of the apprenticeship system in Nova Scotia.**

- **The role and functions of the Trades Advisory Committees in the vocational schools should be clearly defined and steps should be taken to ensure that they fulfil the advisory role assigned to them.**

- **Continuous operation of the vocational schools should be introduced only following a thorough study of the expenses involved and in response to**

a provincial manpower plan that identifies probable directions of labour market demand and the best educational means to meet them.

- **A yearly survey of occupational education graduates' success in finding employment should be undertaken, and the results should be printed and distributed to career guidance counsellors.**

- **Career guidance counsellors should be encouraged to give more thought to directing suitable candidates toward the occupational education system, rather than toward the universities.**

- **Guidance counsellors should encourage suitably qualified women to study non-traditional subjects offered in the occupational education system.**

- **An effort should be made to increase the number of qualified women instructors on the occupational teaching staffs or on the Trades Advisory Committees.**

- **A thorough study should be made of the occupational education programmes and funding arrangements at the Atlantic Technical Vocational Centre, Amherst, with a view to ensuring that training is responsive to deaf students' needs.**

- **A core curriculum should be introduced in the secondary schools to ensure that students obtain the general educational background necessary to encourage them to seek a wide range of job skills. Mathematics should be compulsory in junior high school to Grade IX level, and senior high school students should experience a core curriculum including mathematics, English, a science, a social science and a language, all taught to a rigorous standard. They should also receive liberal exposure to the arts.**

- **Occupational education institutions should give consideration to introducing training modules that provide a core of skills which can be transferred to a variety of different occupations.**

- **Systematic response to short-term fluctuations in demand in the job market is best assured by concentrating the delivery of occupational education in the vocational schools and technological institutes, rather than in the universities.**

- **If demographic changes lead to excess capacity in the vocational schools, the policy of restricting vocational school courses to students under the age of 21 should be reviewed with a view to opening these courses to adults as well. Alternatively more courses for adults only could be taught using the school facilities.**

- The subdepartment of Manpower, currently in the Department of Labour and Manpower, and the subdepartment of Vocational and Technical Training, currently in the Department of Education, should be removed from their present departments and amalgamated in a new Department of Manpower and Occupational Education.

- The Employment Opportunities Branch, currently in the Department of Development, should be transferred to the proposed Department of Manpower and Occupational Education as a division directly responsible to the Deputy Minister.

- The subdepartment of Vocational and Technical Training should ensure coordination of institutional occupational education throughout the system, in high schools, regional vocational schools, district vocational schools, technological institutes and, so far as is possible, the universities.

- District vocational schools should submit course outlines, proposals for new courses, proposed course enrolments and proposed employment of new instructors to the Programme Support division of Vocational and Technical Training for approval.

- The Vocational and Technical Training subdepartment should ensure that course rationalization and standardization occurs within the system of vocational schools and technological institutes.

- The Vocational and Technical Training subdepartment should exercise a watching brief over the industrial arts and business education programmes in the high schools. The Programme Support division of Vocational and Technical Training should give ultimate approval to course outlines, proposals for new courses, proposed course enrolments and staff development in these two high school programmes.

- Vocational and Technical Training should make a special effort in the high schools to publicize the entrance requirements of vocational schools and technological institutes.

- The Deputy Minister of the proposed Department of Manpower and Occupational Education should be a non-voting member of the Council on Higher Education.

Chapter Six

Continuing Education

Continuing education may be defined as that education provided to adults at any time in their lives following their departure, at whatever level, from the formal education system. Continuing education is generally part-time and may include part-time study undertaken for a certificate or a degree, but certification is not an essential part of continuing education: its essence is, rather, the provision of knowledge and technique to people who desire to become better informed and better skilled. Its goal is personal development, that is, the development of the full potential of the students. While education within the formal system is intended to provide the fundamental knowledge and skills for living and working in our society, continuing education builds on these foundations by providing the opportunities for lifelong learning. It assumes that education does not and should not stop upon departure from school or university, and that there are always subjects and techniques which people desire to learn. As a result, the curriculum in continuing education is shaped by consumer demand to a far larger degree than is the case in formal education. Flexibility in curriculum planning and course delivery are characteristic of continuing education, the first, because of the wide variety of subjects people wish to study, the second, because of the wide range of abilities and experience on the part of adult students. Continuing education is, in sum, different in nature from formal, institutional education and to be successful cannot be delivered in the same way.

Continuing Education in Nova Scotia

Continuing education has a long history in Nova Scotia. At the same time as the first universities were being founded, during the intellectual and cultural awakening of the province in the early nineteenth century, other institutions and societies sought to bring the benefits of education to adults who, for one reason or another, could not attend or had not attended the universities.

The most important early organizations to provide continuing education in the province were the Mechanics' Institutes. Modelled after the Mechanics' Institutes that had developed in England during the 1820s to educate the working population of the industrial cities, the first Nova Scotian

Institute was founded in Halifax in 1831 by a committee including Joseph Howe. Between 1831 and 1865 these Institutes or kindred organizations proliferated in the towns and even in some rural districts of the province. Mechanics' Institutes were founded in Sydney, Antigonish, Liverpool, Windsor, Dartmouth, Guysborough, New Glasgow, and Saint Andrews, mainly in the 1840s. Meanwhile Literary and Scientific Societies were founded in Pictou, Yarmouth, Truro, Stewiacke, Tatamagouche, Middle Musquodoboit, Musquodoboit Harbour, Barrington, Bridgewater and Amherst. The provincial government provided assistance in the form of small grants in aid until 1842, when the proliferation of the Institutes and Societies was such that the government could no longer afford to subsidize them all, and the grants were ended.

These Institutes and Societies sponsored evening lectures by experts in a wide range of subjects. In its first season, for instance, the Halifax Mechanics' Institute provided lectures on agriculture, algebra, arithmetic, architecture, cart-making, climate, education, friction, geometry, history, hydraulics, hydrostatics, magnetism, mechanical anatomy, mechanics, mensuration and music. The Institutes, furthermore, tried to assemble collections of the latest scientific equipment and other objects of scientific or industrial interest, and frequently had close links with circulating libraries.

In their attempt to satisfy a wide range of interests and bring knowledge to men, women and youth from all sections of the public, the Mechanics' Institutes and kindred societies clearly established the goals and characteristics of continuing education in this province. The educational results of the Institutes, as stated by Joseph Howe, remain as objectives for continuing education today:[1]

> Recreation of a high order, information and improvement of the mental faculties, discovery and encouragement of latent talent and the dissemination of useful knowledge are among the fruits of such Institutions.

Most of the Mechanics' Institutes were extinct by the late 1860s, largely because their functions had been assumed by other institutions. At that time the pattern of delivery of continuing education in the province was established: courses were offered by organizations whose primary *raison d'être* was not educational, while other courses were offered by the formal education system. At first, the continuing education provided by the formal education system was offered mainly by the universities, but from the late nineteenth century courses were also offered by the provincial government through secondary schools and other agencies. This pattern has continued to the present.

(a) Private Sector Organizations

Since the late nineteenth century, a large number of private and voluntary agencies have come to provide some kind of continuing education

service. They may be professional associations or general service clubs and societies, such as the YMCA (whose lectures competed with those of the Mechanics' Institutes in the 1860s), the YWCA, the Nova Scotia Teachers' Union, Women's Institutes and credit unions. Benevolent societies and clubs also sponsor courses in specific subjects. Organizations serving those who need special help, such as the Mental Health Association and the Red Cross Society, provide educational programmes and even alternative forms of schooling for those who need rehabilitation. There are also special interest groups, such as the Fédération Acadienne and the Black United Front, which sometimes arrange lectures and provide literature.

(b) Universities

University involvement in continuing education dates from the middle years of the nineteenth century. In 1841, Thomas McCulloch, the president of Dalhousie, offered some evening courses in logic, composition, mathematics and science. At Acadia, 'general lectures' were planned from the start, and the university has had a continuous record of achievement in adult education. In 1851-52 J. M. Cramp and Isaac Chipman offered joint courses on subjects of general interest, beginning with a discussion of methods 'for the successful prosecution of studies'. In 1923 Acadia began offering summer schools and by 1932 had its own radio station to provide distance education to adults.

From the 1870s the universities were much influenced by the university extension movement that had originated in England. Its aim was to bring education to people outside the universities through a course of 'systematic study and testing examinations' leading eventually to a university degree, such as the 'external' degrees of the University of London.[2] In Canada, however, many believed that degrees were not in themselves the determining objective of continuing education. Rather, the provision of necessary knowledge and techniques to people in the community who desired them was a justifiable use of the university's resources.

The best known example of this school of thought was the People's School started in 1920 at Saint Francis Xavier University. This school, from which grew the Antigonish Movement, offered two-month courses for adults without an academic training. The goal was utilitarian: to help impoverished farmers, fishermen, lumbermen and miners to solve their problems through the formation of cooperatives and credit unions. The movement was more fully developed by the university's Department of Extension, founded in 1929.

A diversity in the Nova Scotian university offerings described as continuing education has existed since that time. First of all, universities consider that adults seeking continuing education may be satisfied with the opportunities provided for part-time studies, the provision of certain daytime courses in the evenings, and the provision of certain courses to students at a distance from the university through telecommunications, correspondence

courses and classes held in smaller centres. The classes are not necessarily aimed at the adult learner and are usually intended to form part of a degree programme, even though many adults merely seek information and skills for personal fulfilment on a non-credit basis.

Continuing education at a university level of intellectual rigour but presented in such a way as to take cognizance of the needs and wide range of abilities of the adult learner is mainly found in the refresher and updating courses offered to professional people, such as doctors. Refresher and updating courses of a similarly high standard are also offered to members of certain occupations, such as public administrators and managers.

Apart from part-time degree programmes and continuing professional education, the universities also offer, sponsor or provide the facilities for courses described variously as adult education or extension services. This is not a well-defined field, for the courses may range from one-day workshops in a specific subject to non-credit interest and refresher courses to some certificate and diploma programmes. The length, content and intellectual rigour of these courses vary considerably. Indeed, some courses duplicate, or are at the same level as, the general interest courses provided by the school boards. The lack of clear definition of standards in adult education or extension services, and the existence of some courses that may not be of university standard, have tended to diminish the prestige of continuing education on campus. Continuing education, rather than being conceived as a means of maintaining the educational interests of university graduates (and other suitably qualified people) for the rest of their lives, is frequently regarded as merely additional to the university's central function of providing courses for credit.

Some idea of the universities' direct role in continuing education may be gained from Table 1, which is derived from Table 6 in Chapter 1. As can be seen from the totals, in 1983-84, 2,526 people were studying part-time for an undergraduate degree and 854 for a graduate degree. (It should be noted, however, that MPHEC estimates that only 15% to 20% of those part-time students who declare they are studying for an undergraduate degree part-time actually graduate. In many ways, therefore, students in this group may be considered as undertaking continuing education.) Meanwhile some 3,626 people were engaged in other part-time programmes. Many of these were qualifying programmes for a degree, but it is safe to assume that the majority of these part-time students were taking individual courses for their personal benefit.

University expenditures on continuing education courses are hard to determine. All expenditures on courses for credit are combined, and the actual costs of educating part-time students cannot readily be assessed. Reporting of expenditures on non-credit courses seems to vary from university to university and the significance of the reported expenditures cannot be determined.

TABLE 1
Part-Time Enrolments in University Programmes, by Sex
1983-84

Institution	Undergraduate			Graduate			Other			Total			Full-time Enrolment
	M	F	T	M	F	T	M	F	T	M	F	T	
Acadia	127	104	231	42	50	92	290	189	479	459	343	802	3,256
AST	1	1	2	12	9	21	17	18	35	30	28	58	104
Dalhousie	399	191	590	164	184	348	380	260	640	943	635	1,578	7,810
MSVU	393	109	502	67	27	94	637	164	801	1,097	300	1,397	1,793
NSAC	—	—	—	—	—	—	9	6	15	9	6	15	242
NSCAD	28	19	47	3	—	3	17	15	32	48	34	82	490
St.F.X.	44	28	72	17	22	39	116	72	188	177	122	299	2,485
SMU	256	286	542	72	87	159	366	400	766	694	773	1,467	3,131
TUNS	—	—	—	10	88	98	8	28	36	18	116	134	1,093
UCCB	299	221	520	—	—	—	299	172	471	598	393	991	1,195
UKC	6	4	10	—	—	—	4	2	6	10	6	16	492
U.Ste.A.	8	2	10	—	—	—	102	55	157	110	57	167	158
Totals	1,561	965	2,526	387	467	854	2,245	1,381	3,626	4,193	2,813	7,006	22,249

Observations: 'Other' programmes include testamur, master's qualifying year, post-bachelor's courses, individual undergraduate and graduate level courses, undergraduate preliminary year and licentiate.

Source: MPHEC

(c) Government

Provincial government involvement in continuing education may be said to have begun with the Coal Miners' Schools in 1889 and the Government Night Schools for Adults in 1890. In 1945 an Adult Education division was created in the Department of Education. Apart from being responsible for the technological institutes, AVTCs and modules, the Adult Education division promoted continuing education in adult education classes, along with community development and other adult education and cultural services. Continuing education was the responsibility of a specific section, which is now the Continuing Education division of the subdepartment of Vocational and Technical Training. Since the reorganization of the department, the Continuing Education regional staff submit local proposals concerning continuing education matters to one of the four Vocational and Technical Training area directors, who then passes the proposals on to the Continuing Education division in Halifax. The division thus acts as a coordinator of continuing education programmes throughout the province.

Like the Continuing Education section in previous years, the division provides funds and counselling so that school facilities may be used by the school boards and community groups to offer evening classes and activities to adults. The school boards offer classes in programmes including high school credit, General Educational Development, basic upgrading in language and arithmetic, homemaking, business education and management, languages and general interest courses. In certain communities, interested groups of citizens have formed community schools which use the school

facilities to offer programmes that consist of *'activities* rather than *classes*, of *recreation* rather than *instruction'*. Such activities include badminton, band, basketball, cake decorating, cheerleading, chess, conversational French, crocheting, dancing, floor hockey, knitting, majorettes, movies, physical fitness, police communication, table tennis, tutoring, ukulele, volleyball and yoga. Also funded by the Department of Education are pre-retirement and other programmes for senior citizens as well as workshops for tutors in literacy.

As can be seen from Table 2, 71,897 persons benefited from the continuing education programmes sponsored by the Department of Education in 1983-84. 39,200 were involved in activities in the community schools, while 26,679 attended classes in the continuing education programmes run by the school boards. An analysis of the courses offered by the school boards is found in Table 3.

Before the Report of the Commission on Public Education Finance (the Walker Report) in 1981, continuing education in the schools was funded by a provincial grant made to the Continuing Education Programme. This grant was then divided among the school boards. The amount received by each board was based on the previous year's expenditures, the amount requested and the total funds available. As a consequence of the report, however, the amount of adult education grants made available to any school board was whatever sum was the lesser of

(1) the product of the average number of students enrolled in schools operated by the school board multiplied by a sum not exceeding $15 (currently $13), or

(2) the actual cost of adult education programmes provided by the school board and approved by the Minister.

It should be noted that the students considered in (1) are primary and secondary school students only, and that the average is between one year's September enrolment and the September enrolment of the year before. (It may be noted that this figure may bear little relation to the total number of adult education students in a school board district.) For the fiscal year 1985-86, the sum obtained by the formula in (1) will be applied automatically, and actual expenditures by the school boards on continuing education will be monitored. The Departmental expenditures on continuing education from 1982 to 1984 and the projected expenditures in 1985 are shown in Table 4. **As can be seen, current expenditures on continuing education programmes in the schools are about $3,000,000 a year. Two-thirds of these expenditures are covered by the provincial grant, while registration fees cover only one-third of the costs of the programmes.**

Continuing studies in occupational education are available through various programmes. Some of the general interest courses offered by the school boards are occupational in nature: automotive repair and maintenance, building construction, bartending theory, basic electronics and so on.

TABLE 2
Enrolments in Continuing Education Programmes Sponsored by the Nova Scotia Department of Education 1983-84

Programmes/Activities	Number of Programmes/Activities	Number of Enrolments/Participants
Community Schools	74	39,200
Volunteer Reading Aide Workshops	17	237
Small Business Management	45	686
Senior Citizen Seminars	15	1,127
Pre-Retirement Seminars	31	768
General Educational Development Tests	45	3,200
Public School Programmes	2,106	26,679
Totals	2,333	71,897

Source: N.S. Department of Education.

TABLE 3
Continuing Education: Public School Programme 1983-84

Subject Classification	Classes	Enrolments
High School Credit	171	2,484
Adult Basic Education	84	938
Accelerated Programme	40	617
Homemaking/Sewing	200	2,109
Conversational French	112	1,195
G.E.D. Preparatory	163	1,918
General Interest/Vocational	928	12,235
English Classes for Refugees (Department of Labour and Manpower)	5	166
Part-time Apprenticeship (Department of Labour and Manpower)	19	360
Other	384	4,657
Totals	2,106	26,679

Source: N.S. Department of Education

Evening courses and courses in occupational subjects are offered by the Extension Services of NSIT, and by the Cape Breton AVTC and some vocational schools in other parts of the province. There is also a part-time apprenticeship course operated by the Continuing Education Division of Vocational and Technical Training in conjunction with the Department of Labour and Manpower (enrolment given in Table 3). These apprentices are selected by Labour and Manpower, usually from young people already working in some field, and receive classroom instruction organized by Continuing Education in some facility, not necessarily belonging to the province, in their local area.

TABLE 4
Adult Education 1982-1985
Expenditures, Provincial Grants, Registration Fees

School Board	1982 Actual Expend	1982 Prov Grant	1982 Regist Fees	1983 Actual Expend	1983 Prov Grant	1983 Regist Fees
Annapolis	56,257	44,510	11,939	74,629	53,976	19,368
Antigonish	72,544	63,448	6,420	75,241	49,194	27,028
Cape Breton	271,337	264,891	39,297	282,618	269,202	29,771
Clare-Argyle	52,062	51,642	1,484	40,810	40,468	4,341
Colchester-East Hants	206,500	181,839	69,600	233,979	155,088	79,694
Cumberland	102,743	97,682	5,859	90,783	86,430	10,972
Dartmouth	452,566	200,198	124,064	445,318	151,086	148,027
Digby	29,589	29,515	2,460	29,044	27,959	2,894
Guysborough Co.	37,520	35,503	3,360	36,846	36,222	4,500
Halifax	519,000	266,300	172,300	548,237	205,176	177,310
Halifax Co.-Bedford	289,700	260,759	35,200	475,423	327,504	111,160
Hants West	32,373	26,817	11,389	67,225	43,902	21,175
Inverness	82,134	82,134	9,717	64,478	64,458	0
Kings Co.	121,900	97,674	32,200	129,991	94,046	49,141
Lunenburg Co.	117,858	105,319	32,195	159,884	104,796	57,089
Northside-Victoria	109,671	109,670	21,245	99,378	94,643	24,088
Pictou	121,436	118,763	11,554	139,539	132,888	33,088
Queens	44,928	41,355	3,545	33,490	30,803	3,131
Richmond	35,523	35,523	3,165	36,549	36,516	0
Shelburne Co.	38,500	36,014	5,300	74,040	42,810	3,684
Yarmouth	51,427	41,754	9,168	61,122	42,186	20,353
Hantsport BSC	874	514	468	717	0	0
	2,846,442	2,191,824	611,929	3,199,341	2,089,353	826,814

TABLE 4 (continued)

School Board	1984 Actual Expend	1984 Prov Grant	1984 Regist Fees	1985 Est Expend	1985 Prov Grant Global	1985 Regist Fees
Annapolis	88,141	57,792	23,544	76,650	56,650	20,000
Antigonish	85,431	62,517	25,262	84,758	62,309	22,449
Cape Breton	294,951	285,409	29,774	250,278	278,278	54,000
Clare-Argyle	45,591	45,591	5,985	53,059	45,559	7,345
Colchester-East Hants	217,368	151,662	78,433	255,500	167,655	79,994
Cumberland	63,945	59,633	13,415	69,700	89,713	4,000
Dartmouth	457,345	156,930	147,734	481,283	151,749	160,000
Digby	28,042	21,326	4,520	18,425	32,565	5,390
Guysborough Co.	33,995	33,995	6,193	42,800	37,876	5,800
Halifax	736,766	216,580	420,484	626,115	210,048	180,000
Halifax Co.-Bedford	521,873	358,904	159,190	416,400	362,921	123,500
Hants West	89,771	46,937	38,387	132,216	47,398	83,250
Inverness	69,525	68,283	0	66,749	66,749	0
Kings Co.	132,437	100,814	47,304	155,400	143,397	52,000
Lunenburg Co.	169,399	112,827	57,178	162,788	112,879	50,000
Northside-Victoria	122,942	104,449	24,858	123,700	101,459	22,241
Pictou	153,321	143,533	28,649	92,558	142,571	28,000
Queens	40,819	35,126	4,826	34,879	34,879	3,000
Richmond	38,806	38,806	3,072	38,357	38,357	0
Shelburne Co.	57,162	45,656	17,534	60,058	45,110	15,000
Yarmouth	71,709	44,987	27,452	75,950	44,525	29,000
Hantsport BSC	720	0	840	0	3,159	0
	3,520,059	2,191,757	1,164,634	3,317,623	2,275,810	944,969

Source: N.S. Department of Education, Public Education subdepartment, Grants and Finance

Correspondence studies in academic courses from Grades I to XII and in 16 to 18 technical courses at vocational school level are offered by the Correspondence Studies section of Curriculum Development in the Public Education subdepartment of the Department of Education. In 1984-85, 2,093 students, of whom about 45% were aged 18 and over, were enrolled in the academic courses, while 261, mainly adults, were enrolled in technical courses, for a total of 2,354 correspondence students. The cost of a secondary school course is $45, and technical courses may cost somewhat more. (It should be noted that technical courses are in such subjects as drafting, pre-technical mathematics and elementary bookkeeping which do not require mechanical equipment.)

The school boards and occupational education systems are not the only provincial government agencies that provide continuing education. Members of various government departments, such as Lands and Forests, Fisheries and Agriculture provide formal and informal instruction to citizens whose livelihood is within the departmental jurisdiction. Museums and libraries also offer courses exhibiting features generally associated with continuing education.

Issues Raised in the Hearings

During the hearings the need for continuing education of some kind was stated, directly or indirectly, in no less than 68 briefs. All stated that education for adults following their departure from the educational system was essential at all levels, whether secondary or post-secondary, and in both academic and occupational subjects. Education should not end with adolescence and early adulthood, but is required by mature adults to obtain new skills and knowledge or to update those skills and knowledge they already possess, so as to obtain both new career qualifications and personal fulfilment. Means should be found to enable people already on the job to return to the occupational system for retraining and upgrading courses. Likewise, the universities should provide not only programmes for people studying a subject for the first time, but also refresher or updating programmes for people who had studied the subject at university many years before. Such refresher courses are currently offered to professionals, but are not found in most disciplines.

The obstacles preventing the extension of education to large numbers of adults may be classified under three general headings: difficulty of access, attitudes unfavourable to adult education and lack of coordination in the delivery of continuing education programmes. All three problems were seen to affect continuing education as delivered by the university and occupational systems. Statements concerning the programmes offered by the school boards and voluntary bodies were generally favourable, though a need for greater information and coordination was remarked.

It might be observed that some of the groups appearing before the Commission seemed somewhat confused regarding what level of continuing education might be expected from the various systems: the universities, for example, were expected to offer programmes that would be more suitably provided by the school boards or vocational schools.

(a) Access

One of the most frequent complaints concerned the difficulty of access to continuing education programmes offered by post-secondary institutions. Obstacles to access that were mentioned included

(i) lack of information concerning the availability and qualifications required for continuing education courses

(ii) course regulations

(iii) scheduling and availability of courses

(iv) distance from location where courses are offered

(v) the cost of courses

(vi) lack of facilities to accommodate disabled people

(i) Information about Continuing Education

As is the case with so many programmes offered by government and other organizations, there is no readily identifiable centre where the public may obtain information concerning all the continuing education programmes in the area (or the province, for that matter). The school boards and the universities do a good job in advertising their courses through bulk mailings, newspaper inserts and other means, but there would seem to be a need for centres where information on continuing education was continuously available. This is clearly a matter which those groups concerned with continuing education in the various towns and rural areas should look into. Depending upon the locality, the offices of the continuing education administrator of the school board or of the Youth Initiatives guidance counsellor would seem to be suitable places where the most recent information on courses could be placed on file for consultation. The most important point is that, whatever place is chosen, it is given sufficient publicity so that people will know where to go to obtain information. If possible, the centre chosen should also provide counselling services to assist people to choose the course most suitable to them.

(ii) Course Regulations

Course regulations were perceived as an obstacle principally by those seeking to obtain a degree or certificate through part-time credit courses offered by post-secondary institutions. Admissions procedures which did not facilitate registry in courses, the absence of three-year to five-year schedules

for course offerings so programmes could be planned in advance, restricted transfer of course credits from one university to another and time limits on the completion of courses were among the problems mentioned. The Commission has already recommended that a study be made with a view to facilitating credit transfers, and the other matters would seem to be worthy of investigation by universities and post-secondary institutions. It should be observed that a long-term study schedule in which part-time students would select all the courses they wanted to take in advance might ease the difficulties currently faced by students seeking part-time student loans, as is discussed below.

On the other hand, removal of all time limits for completion of courses would be unfair not only to the professor but also to students of classes in succeeding years, who would find their professor's time divided between themselves and preceding students who had failed to submit work from previous courses. This assumes that part-time courses for credit continue to be offered, as now, on a schedule based on the academic year. The best solution to the problem of time limits would be to restructure part-time courses so that they did not adhere rigidly to a one- or two-term timetable but ran a longer time during the year.

(iii) Availability and Scheduling

Of concern to students in both credit and non-credit courses were the availability and scheduling of courses offered by post-secondary institutions. While there is some justification for this concern, some doubt must also exist whether any educational system can offer all the courses people want at the times they want to take them. In any event, there is not sufficient resource available to allow the full range of university or occupational courses to be offered during the evenings. In considering this matter, the Commission can only counsel greater sensitivity on the part of continuing educators to the demand for certain courses at certain times. With greater advance planning by the university in the scheduling of part-time degree programmes, students who can only take courses in the evenings would be spared situations where they find that a course required to complete a degree is not offered in the evenings in their final year.

(iv) Distance Education

One of the most frequent complaints concerned the lack of access to post-secondary programmes that is suffered by people who live in areas at some distance from a university or other post-secondary institution. Means for enhancing geographical accessibility already exist. Some methods have long been practised, such as correspondence courses and mobile classrooms (both in use since the 1930s), classes held in centres away from an institution, and radio and television programmes. More recent methods of distance education include teleconferencing, where students at a distant centre may view a television lecture and discuss matters with the lecturer through interactive

communications systems, and the recording of lectures on video cassettes that students may view in their own homes.

Suggestions for improving distance education frequently stressed the use of the latest communications technology. Early objections to courses delivered by such means, founded on the justifiable concern that viewing an image on a screen was not a satisfactory substitute for discussion with a living teacher, may have been partly, but not wholly, resolved with the introduction of interactive telecommunications. A major objection, however, remains the costs of such technology, which are high and, in some cases, even prohibitive.

Nonetheless, there is great potential in the use of telecommunications technology in distance education, not only for continuing education but also for the education of younger students. The recording of lectures on videocassettes that students may study at home (almost in the manner of a book) and subsequently discuss at a conference centre certainly seems to be a promising teaching method. The Commission therefore encourages both the universities and the Vocational and Technical Training subdepartment to study further use of technological methods for providing education at a distance. It may be that expenses could be reduced if one institution were designated to coordinate and administer programmes prepared by the teaching staff in other institutions. One university, for instance, could administer university distance education, and one technological institute or vocational school could administer distance occupational education.

(v) Cost of Courses

The cost of some courses was considered by some groups to be deterrent. This would hardly seem to be the case with respect to most courses offered by the school boards, where the fees per course are usually $20 to $30, or non-credit courses offered by the universities, where the charge is about $60, though courses involving technical equipment such as computers may be double the cost of other school board or university courses. The objection would therefore seem to be to the cost of courses taken toward a degree; each of these courses is usually about one-fifth the cost of a full-time registration at the institution concerned, that is, from $250 to $350 for a year-long course.

The chief concern that part-time credit students have with the cost of their education is related to student loans, though only 25 to 30 part-time loans are requested every year. Part-time student loans from the Government of Canada are available for students taking between 20% and 59% of a full course load, that is, one or two courses a year. The aid granted is the student's calculated costs, unless a lower amount is requested. The maximum amount a student may have out on loan at any one time is $2,500, though that sum may be the total of several distinct loans. Repayment of these loans must start within 30 days and must be completed in 24 months, though repayment may be rescheduled in cases of hardship. In 1984-85

interest was 12¼%, so repayments on a $500 loan were $24 a month, $120 a month on a $2,500 loan. Persons who are unemployed may obtain interest relief on loans.

The repayment schedule is the chief difference between part-time and full-time loans. Recipients of full-time loans must begin to repay them within six months of ceasing to be a full-time student, and have up to 9½ years to repay. Interest relief is also available for the unemployed and temporarily disabled and for members of low-income families.

The reason for the different repayment schedules lies in the rationale of the Canada Student Loans programme, which is intended to help people to obtain specific qualifications — a certificate, diploma, or degree — after studying a recognized block of courses. It does not assume that adequate qualifications will be obtained after only one or two courses. The full-time student receives favourable treatment, therefore, because his or her programme is clearly defined and there is a definite qualification upon completion. The part-time student's programme, on the other hand, may continue for years until a qualification is obtained, if it is obtained at all. (Only 15% to 20% of part-time undergraduates ever graduate.) Repayment of part-time loans cannot therefore be timed to start within six months of graduation, and it is administratively more convenient for repayment to start within 30 days.

It is evident that part-time loans are directed toward people already in the work force who need a loan to surmount a temporary cash-flow problem. The assumption, justifiable in the Commission's view, is that unemployed persons will prefer to attend university full-time in order to obtain, as quickly as possible, the qualifications they need for re-entering the labour market. They will obtain a full-time loan and, if necessary, receive social assistance from the municipality to cover basic costs. It should be remembered that three courses per year are considered to be full-time, while those taking two per year are part-time. In most cases there seems little reason why a person taking two courses a year who finds the part-time loan repayment schedule difficult should not take three courses and benefit from the more favourable full-time loan repayment schedule.

It may be noted that social assistance is available for two groups who may have difficulty in attending more than two courses a year, namely single mothers receiving family benefits and the disabled. The provincial Department of Social Services, Community Services Section, through its Vocational Rehabilitation Programme for Single Parents, gives single mothers, but not single fathers, up to $200 per month to participate in training programmes leading to employment. The payment is flexible and is calculated by the length of the course taken. Thus a woman who is a part-time student taking two courses at university is eligible for assistance calculated on the basis of the academic year, from September to April. She would thus be eligible for up to $1,600 in assistance, which should cover the costs of two courses ($700) plus day care, transport, books and so on. In

1984-85 some 900 women were participating in this plan, with 421 currently in training.

The costs to disabled part-time students of tuition and books are paid by the Department of Social Services. It may be noted that the Department of Social Services has two plans for disabled full-time students. The first plan is for disabled students living in a university (or other institutional) residence, and covers the full cost of board, lodging and tuition fees. The second plan is for those living at home. The Department then pays their tuition and the cost of required texts and pays them a weekly training allowance. Both plans cover four years of full-time work at a university or two years in academic upgrading or non-university education.

Finally, it may be added that part-time students eligible for unemployment insurance benefits may continue to receive them provided they seek approval from the Unemployment Insurance Commission first. Incidentally, the UIC considers both two and three courses per year to be part-time, depending upon the amount of work currently available for people with the student's training.

Given that educational subsidies exist for the part-time credit students most in need of them, the present loan situation seems reasonably satisfactory. The Commission feels, however, that universities and continuing education groups could discuss the possibility of three- to five-year schedules of part-time courses with credit towards a degree. A student enrolling in one of these programmes would select the courses he or she wished to study over the next three to five years in a specific diploma or degree programme. If such part-time programmes existed, it might be possible to apply the repayment terms of full-time loans to them, since the lending agency would be aware that the student was seeking a specific qualification in a specific period.

(vi) Disabled Students

The final obstacle to access was perceived to be the lack of facilities to accommodate disabled people. This is a problem in all post-secondary education, and the Commission urges institutions providing continuing education to address themselves to the matter. As was mentioned on p. 172, much has been done, but much more could be done to reduce the difficulties disabled persons may have in obtaining an education.

(b) Attitudes to Continuing Education

A frequently mentioned problem was that continuing education courses were not adapted to the needs of adult learners. Here again, the problem was encountered mainly in the universities and relates to the scheduling of courses and to attitudes toward adult students. In terms of scheduling, the fact that a part-time student may find that the course he or she needs to complete a degree is not offered the following year has been mentioned above. So too has the fact that part-time courses are usually offered on a

timetable based on the academic year, though adult part-timers, whose free time is at a premium, would conceivably be better served by evening courses delivered over a longer period than the academic term or year. Attitudinally, there seems to be a reluctance on the part of some professors to display courtesy or, indeed, common sense in teaching persons whose experience and background require modifications in the approaches used for teaching young people. While the Commission is aware that some people may be unduly sensitive about 'returning to school' and suffer from imagined slights, there would seem to be evidence of a certain patronizing and deprecatory attitude towards adult learners on the part of some instructors.

It may be that such an attitude can arise because the place and purpose of continuing education are by no means clear on most university campuses. The offerings described as continuing education frequently consist of a somewhat incoherent array of academic courses that happen to be taught in the evenings, added to a group of general interest courses which may or may not be of academic standard. While the universities speak of continuing education as part of their programme of community service, the Commission detects little consensus on their part regarding the sort of continuing education programmes that are appropriate to a university, as opposed to school boards or the occupational education system. This confusion, as was noted above, seems to be shared by many of the ardent proponents of continuing education.

The Commission believes that the universities should recognize that continuing education is part of their mandate. Furthermore, as part of their planning process, the universities should define the purpose of their continuing education programmes. Evening courses for credit should be planned to enable students to acquire a good grasp of the fundamentals of certain disciplines, and thus ensure that a degree taken part-time in the evenings is academically sound. General interest courses should be conceived not only as a response to popular interest, but also as means of keeping university graduates up to date with new developments in the disciplines they studied while in university. There should, in any case, be a clear definition of the content and standard of general interest courses taught by universities so that such courses draw on appropriate expertise in the institutions and do not overlap with the offerings of the school boards and the occupational system.

At times the needs of the adult learner that are to be met by continuing education were perceived to be identical with, or at least a subcategory of, the 'needs of the community'. There is no doubt an important sense in which continuing education must respond to the needs of the community. The Commission believes, however, that the needs of the community are by no means as self-evident as certain briefs assumed, nor can they be readily identified simply by 'going into the community and finding out what is needed.' Identification of the groups within the community who are interested in receiving further education, and of the subjects and levels of

course that would best meet their needs is a very difficult task, taking a long time and calling for much effort. It requires adult educators working over a long period in close contact with interested groups to assess the educational and training needs of adults. While the Commission urges continuing educators to be open to suggestions from the public for courses to be offered, it also urges members of the public who are interested in continuing education to retain a sense of proportion when considering what can be offered, at least in institutional courses. Merely because a tiny group of people somewhere is interested in a specialized subject should not mean that an institution has to respond to their demands for a course in that subject, and that in not responding the institution is somehow not meeting the 'needs of the community'. The Commission sees no reason why institutions should bend to the demands of self-interest disguised in the cloak of community spirit.

In fact, the Commission was disturbed by the extent to which some of the briefs seemed to suggest that all learning, however informal, should be institutionalized in one form or another and then funded by the government. The Commission has distinct reservations about the degree to which all learning must be organized, coordinated and 'networked'. Certain learning activities would be better organized by informal groups of colleagues, friends and neighbours rather than by educational institutions. The demand that the institutions and the government assume responsibility for the delivery of all kinds of courses would seem to be a denial of personal initiative and resourcefulness on the part of Nova Scotians. It might be noted that for most of their existence the Mechanics' Institutes were organized privately and paid for lecturers, equipment and rental of halls and so on from the subscriptions of their members.

(c) Coordination

That a clear definition of what continuing education is and where and how it should be offered has been so long in appearing seems to be due in large part to a lack of coordination. The challenge is to integrate the diverse bodies and institutions that deliver continuing education courses into a rational system which would assign each its proper place, designate the right function for each one, and make allowance for the transfer of qualified students from one part of the system to another.

This is not a new concern in the Atlantic Region, though the number and range of offerings are now such as to lend it a greater immediacy. In 1973, Memorial University of Newfoundland sponsored a conference at which it was recommended that 'a province-wide agency be established to promote, coordinate and guide the development of adult education'. In 1974, the Graham Commission recommended (III/59/2),

> The Minister of Education should establish a Provincial Continuing Education Council, consisting of representatives of major

> agencies, public and private, engaged in continuing education, to begin the coordination of continuing education activities, and to define and direct the study of continuing education.

Recommendations made to the present Royal Commission have generally supported that notion, and have reflected a concern to meet the need for greater accessibility.

The Commission is in favour of a Provincial Council on Continuing Education, and recommends that a body similar in organization to the Nova Scotia Voluntary Planning Board be established to coordinate continuing education in the province. Just as Voluntary Planning is attached to the Department of Development, the Council on Continuing Education should be attached to the Department of Education.

The Council itself should consist of some eight to ten councillors appointed for staggered terms by order-in-council. The chair would likewise be filled by order-in-council appointment. Membership of the Council would be drawn from persons with an interest and expertise in matters relating to continuing education. The Royal Commission does not believe that places should be allocated to representatives of specific organizations, since it wishes to see the Council function as a cohesive and effective unit, rather than as a forum for interest groups. The Commission expects, however, that representation will include spokespeople for the following groups: the universities and colleges; professional organizations; the public and private sectors; continuing education organizations; special help organizations; and other special interest groups. Membership of the Council should be voluntary, without remuneration, except for the reimbursement of necessary expenses.

The Council should be provided with a small Secretariat, consisting of a Secretary to the Council, two research officers and a secretary/stenographer. The Secretary to the Council would be expected to attend Council meetings and generally perform duties prescribed by the Council. The research officers would be expected to assist the Council and its committees (described below) in their research activities.

The chief functions of the Council of Continuing Education would be the following:

> (i) coordination of continuing education courses offered institutionally by universities, the occupational system and the school boards and by private organizations who wish to form part of the continuing education system;
>
> (ii) ensuring that courses described as continuing education were offered in a way appropriate to adult students;
>
> (iii) maintenance of educational standards appropriate to the institution or organization offering the course;

(iv) discouragement of unnecessary duplication of courses within a geographical region;

(v) administration and updating of a central computer file on continuing education programmes and activities;

(vi) improvement of access to continuing education for the disabled and persons in rural areas;

(vii) ensuring that the public is adequately informed concerning the delivery and subject matter of continuing education courses in the various regions;

(viii) liaison with associations and groups concerned with continuing education; and

(ix) liaison with the Council on Higher Education and the subdepartment of Vocational and Technical Training to bring continuing education matters to their attention.

The Commission sees the Council on Continuing Education's liaison function as extremely important. Meetings of the Council should be held regularly at different locations in the province to enable local continuing education groups, associations and representatives to voice their concerns about the state of continuing education in their areas. These groups would also, of course, have access to the Council at any time regarding matters within its purview. The Council should be prepared to establish committees drawing their membership from persons qualified in continuing education to consider regional matters and specific subjects of interest. Members of the Council would usually chair these committees, but the Council could nominate suitable persons to chair some of them. A similar structure has been found to work effectively for Voluntary Planning over the past twenty years. Meetings and close cooperation with local groups with an active interest in continuing education seems a more productive approach than the establishment of formal regional councils, which would add another layer of costly bureaucracy to the coordinating structure.

On the other hand, the Council on Continuing Education should work closely with the Council on Higher Education to ensure that the universities assume their responsibilities for continuing education. The two Councils should promote proper planning of part-time credit offerings and of non-credit general interest courses so that standards are maintained and coherent courses of credit study are available. They should also encourage the universities to introduce the longer part-time courses and three- to five-year course programmes suggested above. The Council on Higher Education could conceivably employ its powers of discretionary funding to provide incentives for continuing education on campus.

Similarly, the Council on Continuing Education should bring matters affecting continuing education in the school boards and the occupational

system to the attention of the Continuing Education division in the subdepartment of Vocational and Technical Training.

Like the school boards and teachers, continuing educators may be expected to have an interest in matters related to the qualifications required for entry to university credit programmes. Members of the Council or of its committees should therefore attend the meetings between university and secondary school educators proposed in Chapter 2 above (see Forum on Post-Secondary Affairs).

The Council on Continuing Education would thus have a watching brief over all forms of continuing education in the province. It would be expected to provide advice and counsel on continuing education matters to the government in an organized fashion. As a voluntary organization, it would draw on the interest, expertise and enthusiasm of the various groups concerned with continuing education throughout the province.

Recommendations

As a result of its deliberations concerning continuing education, the Commission recommends that:

- **In suitable localities, resource centres for information about continuing education should be identified and well publicized.**
- **Universities should consider the introduction of three- to five-year study schedules for part-time students.**
- **Consideration should be given to providing loans with the same repayment terms as full-time student loans to part-time students registered in a three- to five-year study schedule.**
- **Universities should consider longer terms for credit courses offered in the evenings, thus ending their timetable's strict adherence to the academic year.**
- **The universities and the subdepartment of Vocational and Technical Training should study methods of distance education that would improve access to education without significantly adding to the cost (e.g., video-cassettes, centralization of distance education).**
- **Facilities should be provided to permit disabled people to have better access to continuing education.**
- **Universities should recognize that the provision of continuing education courses (at university standard in terms of content and difficulty) is an integral part of their mandate.**
- **A Provincial Council on Continuing Education, similar in organization to Voluntary Planning, should be established to coordinate continuing education in Nova Scotia. It should be associated with the Department of Education.**
- **The Council should consist of eight to ten members and a chair appointed for staggered terms by order-in-council.**
- **The Council should be provided with a small secretariat, composed of a Secretary to the Council, two research officers and a secretary/stenographer.**

- **The chief responsibilities of the Council of Continuing Education should be the following:**

  (i) coordination of continuing education courses offered institutionally by universities, the occupational system and the school boards and by private organizations who wish to form part of the continuing education system;

  (ii) ensuring that courses described as continuing education are offered in a way appropriate to adult students;

  (iii) maintenance of educational standards appropriate to the institution or organization offering the course;

  (iv) discouragement of unnecessary duplication of courses within a geographical region;

  (v) administration and updating of a central computer file on continuing education programmes and activities;

  (vi) improvement of access to continuing education for the disabled and persons in rural areas;

  (vii) ensuring that the public is adequately informed concerning the delivery and subject matter of continuing education courses in the various regions;

  (viii) liaison with associations and groups concerned with continuing education; and

  (ix) close and continuing liaison with the Council on Higher Education and the subdepartment of Vocational and Technical Training to bring continuing education matters to their attention.

- **The Council should establish committees drawing their memberships from persons qualified in continuing education to consider regional matters and specific subjects of interest.**

- **The Council should hold regular meetings at different locations in the province to enable local continuing education groups, associations and representatives to voice their concerns about the state of continuing education in their areas.**

Footnotes

Chapter 1

1. *Involvement in Learning: Realizing the Potential of American Higher Education* (Washington, D.C., 1984).

2. MPHEC, *In Transition: Evolving Three-Year Regional Planning for Higher Education in the Maritime Provinces, 1982-83 to 1984-85* (Fredericton, N.B., 1982), pp. 4-5.

3. See Royal Commission on Education, Public Services and Provincial-Municipal Relations, *Report* (Halifax: Queen's Printer, 1974), Vol. III, p. 63-31 [hereafter cited as Graham Commission with volume and page number] citing A. Murphy, J. F. O'Sullivan and E. F. Sheffield, *Region-Wide Policies for Higher Education* (Fredericton, N.B.: Maritime Union Study, 1970).

4. Paul Gallagher, Principal, Capilano College, Vancouver, in his paper 'Human Resource Development: Educating the Work Force for Economic Growth', delivered to the Financial Post Conference, 13 March 1985, Ottawa.

5. The definitions in quotations owe much to Robert O. Berdahl, 'Universities and Society: Mutual Obligations'. Address to the Ontario Economic Council Conference, (Toronto, Ontario, 10-11 October 1984), p. 6.

Chapter 2

1. Paul Axelrod, *Scholars and Dollars: Politics, Economics and the Universities of Ontario, 1945-1980* (Toronto: University of Toronto Press, 1982), p. 101.

2. John Barranco, ' "Accountable after the politicians have moved on . . . ." ', *Harvard Educational Review* 54.1 (1984), 9.

3. Claude J. Chenier, 'Vocational Counselling of Women: Sex Bias and Role Stereotyping', in CEIC, *Vocational Counselling in Canadian Community Colleges*, Natcon 7 (1984), 143-149.

4. The full qualifications are described in *Education Nova Scotia*, XI, 8 (20 May 1981), 10.

5. D. G. Winter et al., *A New Case for the Liberal Arts* (San Francisco: Jossey-Bass, 1982), pp. 177-8, italics deleted.

6. *Report* (12 Sept. 1984), p. 56. On p. 57, the Task Force notes: 'Tomorrow's managers will require first, strong communications and interpersonal skills in order to respond to the increased emphasis on human resource management and planning and the explosion of information-based products and services. Secondly, tomorrow's managers will require the ability to understand and manage technological change. We are concerned that business schools are not producing enough managers with these skills. Graduates from business schools still seem to be heavily skewed towards financial management and accounting expertise.'

7. (Oxford: Basil Blackwell, 1980), pp. 94-5.

8. H. Selye, 'What Makes Basic Research Basic?' in The Saturday Evening Post, *Adventures of the Mind* (New York: Alfred A. Knopf, 1959), p. 138.

9. CAUT. *Handbook of Policy Statements, Guidelines and Model Clauses*, 3rd edn (Ottawa, 1979), p. 2.

10. Ibid., pp. 15-17.

11. Allan Evans, 'If there ain't a law, we'll make a law.' *CAUT Bulletin* (Sept. 1983).

12. See J. R. Silber, 'Tenure in Context', in Bardwell L. Smith and Associates, *The Tenure Debate* (San Francisco: Jossey-Bass, 1973), pp. 35-39.

13. J. K. Hiller, 'Clue: Tenure described as "four-letter word"', *CAUT Bulletin* (December, 1984).

14. Committee of Vice-Chancellors and Principals. *Report of the Steering Committee for Efficiency Studies in Universities* (the Jarratt Committee) (London, 1985), p. 30.

15. *Scholars and Dollars*, pp. 205-206.

Chapter 3

1. O. Mehmet, *Who Benefits from the Ontario University System: A Benefit-Cost Analysis by Income Groups* (Toronto: Ontario Economic Council, 1978), p. 45.

2. *Report of the AAU — MPHEC Committee on Foreign Students (University)* (Fredericton: MPHEC, 1985).

Chapter 4

1. Berdahl, 'Universities and Society: Mutual Obligations', p. 15.

2. UGC, *A Strategy for Higher Education into the 1990s* (London: HMSO, 1984), p. 39.

3. Berdahl, 'Universities and Society: Mutual Obligations', pp. 14-15.

4. Ibid., p. 9.

5. Nova Scotia Confederation of University Faculty Associations' Brief to Education Task Force, Nova Scotia New Democratic Party (5 June 1985), p. 25.

6. Berdahl, 'Universities and Society: Mutual Obligations', p. 10.

7. Howard R. Bowen, *The Costs of Higher Education* (San Francisco: Jossey-Bass, 1980) p. 197; on this subject see also Paul T. Brinkman and Larry T. Leslie, 'Economies of Scale in Higher Education: Fifty Years of Research', paper presented to Association of Institutional Research Conference, Portland, Ore., 29 April 1985.

8. From G. Keller, *Academic Strategy: The Management Revolution in American Higher Education* (Baltimore: The Johns Hopkins University Press, 1983), pp. 152-163.

Chapter 5

1. Nova Scotia Department of Education, *Public School Programs, 1982-83; 1983-84* (Halifax, n.d.,), pp. 60, 35.

2. Quoted in Parliamentary Task Force on Employment Opportunities for the 1980s, *Work for Tomorrow: Employment Opportunities for the '80s* (Ottawa, 1981), p. 67.

3. W. Clark and Z. Zsigmond, *Job Market Reality for Postsecondary Graduates*, Catalogue 81-572E (Ottawa: Statistics Canada, 1981), p. 145.

4. 'Normally, technology is not concerned with the development of new principles and methods but rather the achievement of some practical objective through the application of proven methods, procedures and techniques.' NSIT, *Calendar 1982-84* (Halifax, n.d.), p. 4.

5. *Nova Scotia Management Needs Survey*, p. 28, quoted in N. S. Department of Development and Department of Labour and Manpower, 'A Focus on Manpower: Agenda for Action' (Halifax, 1982), pp. 50-51.

6. (8 September 1984), p. 18.

Chapter 6

1. Quoted in C. Bruce Fergusson, 'Mechanics' Institutes in Nova Scotia', *Bulletin of the Public Archives of Nova Scotia*, XIV (1960), 29.

2. See Robin S. Harris, *A History of Higher Education in Canada, 1663-1960* (Toronto: University of Toronto Press, 1976), pp. 147-148.

List of Recommendations

Chapter 1

1. The Government of Nova Scotia should establish clear objectives for post-secondary education, both university and occupational, and ensure that these objectives are widely known throughout the educational system.

2. The Government of Nova Scotia should adopt the following objectives for university education in the province:

(1) Teaching to promote the general powers of the mind.

(2) The advancement of learning, through research and the preservation of knowledge. Opportunities must be provided for research in subjects of local, national and international interest at universities with appropriate facilities for such studies, and library and archival resources must be maintained to permit high standards of research and teaching.

(3) The transmission of a common culture and common standards of citizenship. Students must be educated in scientific, political, cultural and philosophical principles enabling them to live as knowledgeable and responsible citizens.

(4) Instruction in skills suitable to play a part in the general division of labour.

(5) Provision of facilities to enable continuous learning throughout adult life.

(6) Availability of the fundamentals of a university education in an institution within reasonable geographic proximity of the homes of qualified students.

(7) Availability within the province and within the Maritime region of a wide, but selective, range of subjects.

(8) Protection and nurture of the heritage and culture of the province and region.

(9) Service to the community in a manner compatible with the universities' teaching and research functions and intellectual interests.

(10) Communication with, and full accountability to, the people of Nova Scotia for the utilization of available resources in an effective and cost efficient manner. Such communication should occur through designated governing bodies including academic senates, university boards of governors, university/government intermediary bodies and the provincial legislature.

Chapter 2

3. The secondary school system should ensure that all graduating students, whether proceeding to university or not, possess the fundamental academic skills of reading, writing, listening, studying, reasoning and performing mathematical and computer operations.

4. A body, preferably established by and representing all the provincial universities, should set tests of ability for all prospective university students. There should be a Use of English (or, for francophone institutions, a Use of French) examination to test reading, writing and reasoning, and a Use of Mathematics examination to test ability to understand mathematical reasoning and perform mathematical operations.

5. The universities should require that all applicants have successfully passed high school courses in English (or, for francophone institutions, French), mathematics, science, social science and another language, preferably the other official language, at the Grade XII level. Applicants should also have had liberal exposure to the fine arts during their high school years.

6. There should be regular meetings between groups concerned with university education (administrators and faculty) and secondary education (administrators, teachers, guidance counsellors) to ensure that university entrance requirements and standards are known and understood throughout the educational system.

7. The Department of Education should seek to provide the equivalent of one full-time counsellor for every 500 students at the high school level.

8. School boards should try to increase the number of female guidance counsellors.

9. The Department of Education should specify precisely what a guidance counsellor's duties are, and should ensure that counsellors are properly trained to provide them.

10. A more accessible training programme and a more rigorous programme of professional development should be established for people who have been appointed as counsellors.

11. A counsellor's training should include courses that foster sensitivity to the special difficulties experienced by women, minorities and disabled people in making career decisions. Counsellors should be aware of the particular need to ensure that people in these groups are adequately informed about the full range of career and educational options open to them.

12. Counsellors should encourage young women to consider careers in occupations in which women have not been strongly represented in the past, such as technology and the sciences.

13. Counsellors should stress the absolute necessity of acquiring credits in courses prerequisite for entry to university disciplines.

14. University counselling services should be made available where they do not exist at present and they should be better publicized where they do exist.

15. The Department of Labour and Manpower should provide career and educational counselling for mature adults as well as for youths. Such counselling could be undertaken through the Youth Initiatives Programme guidance centres.

16. A university education should be synonymous with a liberal education. In consequence, all students wishing an undergraduate or first degree, regardless of their field of specialization, should take a core curriculum. This core should consist of courses in the grammar and literature of whichever of the two official languages is their mother tongue, a modern language, philosophy, mathematics, history, political economy and a science.

17. The core curriculum should stress the relationships between the subjects studied and should develop in the student the intellectual powers and abilities associated with educated people.

18. Programmes at undergraduate or first-degree level that do not include the core curriculum should not result in a baccalaureate or higher degree but in diplomas or advanced certificates.

19. To improve the standards of teaching in our universities, all doctoral students should be given a thorough grounding in the theory and practice of teaching.

20. Certain professors currently in the universities should be given a training in teaching methods in their fields and should subsequently conduct short courses in effective teaching methods for other professors. Attendance at one of these courses could be made a qualification for continued appointment or tenure.

21. Teaching and scholarship must be given equal value to basic research and development when professors are assessed for tenure or promotion.

22. Universities should require evidence of research planned for, and undertaken during, sabbatical leaves.

23. Universities must introduce periodic reviews of academic performance by which the teaching and research competence of the faculty may be fully and fairly assessed. These reviews should be of two types:

> **(a) an annual review, and**
>
> **(b) a more complete review on occasions of contract renewal, consideration for tenure or promotion and, in general, once every five years.**

Unfavourable reviews should result in disciplinary measures.

24. More women should be encouraged to seek the qualifications necessary for academic employment.

25. The universities should make every effort to ensure that there are opportunities for the full-time employment of younger academics and other recently qualified graduates.

26. The universities should take steps to develop an effective structure of governance that will enable the establishment of a clear set of academic priorities and the effective allocation of resources.

Chapter 3

27. Provincial government increases in post-secondary financing should be harmonized with increases in federal EPF tranfers for post-secondary education.

28. The Nova Scotian university system should be provided with operating grants which, when measured on a per FTE student basis, would be at a level equal to the Canadian average.

> **(a) It is the responsibility of the Government of Nova Scotia to provide that portion of the university system's total operating grant that would**
>
> > **(i) cover the costs of educating all Nova Scotian students attending university in Canada, and**
> >
> > **(ii) cover the costs of educating a fair share of students from other provinces in Canada and from other countries of the world. The Nova Scotian share of other Canadian students is composed of the number of students who are accepted on a one-**

for-one exchange for Nova Scotian students enrolled in other Canadian provinces, *plus* that number of other Canadians resident in the Territories and outside Canada that would be appropriate to a province whose population is of Nova Scotia's size.

(b) Other provincial governments should provide that portion of the total operating grant that covers the costs of educating students from their jurisdictions whose numbers raise Nova Scotian university enrolments beyond levels appropriate to a province whose population is of Nova Scotia's size.

(c) The Government of Nova Scotia should request the Government of Canada to provide, as part of its foreign aid programme, that portion of the total operating grant that covers the costs of educating that number of non-Canadian students considered to be in excess of the number appropriate to a province whose population is of Nova Scotia's size.

(d) If the requested transfers from other governments are denied, the enrolment of out-of-province students should be restricted to levels appropriate to a province whose population is of Nova Scotia's size.

29. Any future method of allocating operating grants to the university system should include a non-formula discretionary component that is allocated on the basis of system needs and priorities to effect beneficial change in the system.

30. Universities should be required to commit themselves to detailed planning covering a three-year period.

31. The Government of Nova Scotia should make available to the university system general indications of level of financial support for two years into the future.

32. Detailed allocations of operating grants should be announced three to six months before the beginning of the institutions' fiscal year.

33. In situations where the allocation formula has proven to have caused inequities, a much more expeditious method of assigning equalization grants should be adopted to correct recognized inequities.

34. Allocation of monies by means of restricted funds should be continued and, if possible, increased.

35. Tuition fees should increase so that students, as the primary beneficiaries of their university education, assume 50% of the costs of their instruction.

36. Foreign students should pay the full instructional costs associated with their programme, except for students from the countries defined by OECD as the twenty-five least developed nations.

37. The universities should introduce differential fees that reflect major differences in programme costs. A differential fee structure based on the following classifications is suggested:

- **Arts and Commerce**
- **Science and Engineering**
- **Medical/Clinical**
- **Professional Programmes**
- **Graduate Programmes**

38. The Government of Nova Scotia should adopt a policy that will ensure that no student with the requisite ability and attainments will be deprived of the opportunity to find a place in a programme of study in an institution in the province, though not necessarily in the programme or institution of first choice.

39. The Government of Nova Scotia should introduce an Educational Opportunity Fund, created by statute and financed by the government, which would provide assistance in the form of loans to students in approved post-secondary educational programmes who demonstrated a need for financial assistance.

40. The Educational Opportunity Fund should replace the Nova Scotia Bursary Programme as a supplement to the financial assistance provided by the Canada Student Loans Programme.

41. Student loan assistance obtained under the Educational Opportunity Fund should be repayable contingent upon, and according to a schedule directly related to, the recipient's ability to pay after having completed his or her education.

42. The amounts of defaulting loans should be repaid from provincial government revenues as a subsidy to the Educational Opportunity Fund.

43. The criteria used for the Educational Opportunity Fund in assessing needs should be consistent with the criteria in use for the Canada Student Loans Programme.

44. The Government of Nova Scotia should request the Federal Government and the federal granting councils to recognize indirect costs as eligible costs in research grant awards.

45. The Government of Nova Scotia should review its support for basic research and development activities through all existing agencies and

departments of government in the province with a view to formulation of a policy in this area.

46. Universities should strive to develop private sector sources of funding.

Chapter 4

47. The universities of the province should be considered, and should consider themselves, as forming a provincial system, and the plans and priorities of each university should take cognizance of, and be in accord with, the plans and priorities of the system as a whole.

48. In a period of financial constraint and expected decline in student population, the universities must seriously consider means to promote cost-effectiveness, that is, the delivery of the highest academic standard of programme for the level of resource available to the system as a whole. To take full advantage of provincial funding, there must be an efficient means of reallocating resources, human, physical and financial, within each university and between the universities.

49. A provincial intermediary body, called the Nova Scotia Council on Higher Education, should be established and endowed with executive authority and discretionary powers over funding in order to ensure that university planning, programming and resource allocation are performed in the context of a provincial university system.

50. Once the Council is established, provincial government decisions to accept, adopt or approve would be required in the following areas only:

- level of resource available to be provided to higher education.
- provincial policies at the highest level with respect to university education. These policies would originally be developed by the Council and should be approved, amended or rejected by government only after consultation with the Council.
- continuation of the Council's mandate with respect to higher education.

51. The Council must respect the autonomy of the universities and the academic freedom of the faculty. Ultimate decisions in certain matters must be left to the universities themselves. These matters include

- academic policies
- academic standards

- admission standards
- graduation standards
- selection and appointment of university staff

The Council should, however, have the right to hold the institutions accountable for their performance in the above areas.

52. The Council must have the authority to ensure discussion and review of all topics related to the university system.

53. The future composition and responsibilities of MPHEC or its successor should be established by negotiations between the three Maritime provinces. It is advisable that a regional agency be maintained for the purposes of data collection and coordination of specific programmes of regional importance.

54. The Council on Higher Education should be created by statute, conferring upon it the powers of an administrative tribunal with the right to enquire into any and all things relating to higher education in Nova Scotia.

55. The Council should be established as the financial recommending and financial granting agency of the Nova Scotia government for all matters of university education.

56. The Council, not a section in the Department of Education, should be given the responsibility for advising the Minister of Education in university matters.

57. Members of the Council must be chosen for their recognized ability and understanding of academic and administrative affairs. Councillors must be prepared to transmit to both universities and government, with the greatest of sensitivity, public concerns about the activities and performance of the university system.

58. The Chairman or Chairwoman of the Council must be full-time, and the other councillors must be able to dedicate at least four to six days a month exclusively to the work of the Council.

59. There should be seven members of the Council, including the Chair. No more than two persons should be currently active in the universities and no more than two persons should be currently active in government. Of the seven councillors, one should be a recognized spokesman or spokeswoman for science and technology and one for the arts and humanities. Appointments to the Council should be by order-in-council for staggered terms.

60. The Chair of the Council should normally be occupied by one of the non-governmental and non-academic members.

61. The Council should select its own Secretary and research staff. To attract the best qualified staff available, the Council should be permitted to dispense with Civil Service regulations in hiring its personnel.

62. The Council's chief areas of responsibility should be

- planning for the system
- programme evaluation and coordination
- budgeting for the system

63. The Council's first responsibility must be to develop a long-range comprehensive plan for higher education in Nova Scotia. This plan should represent the system response to matters of university education in the province.

64. As a corollary of the long-range plan, each university should be encouraged to initiate a planning process that would clarify the institution's specific role and mission within the provincial system.

65. Review of programmes in a particular discipline should occur on a system-wide basis to determine whether the programmes are of a high standard and whether they could be more effectively delivered at a reduced number of institutions.

66. The Council should request working parties composed of academic leaders within the discipline under review to assess all the programmes in the discipline within the system in terms of academic excellence and cost-effective delivery.

67. Programme review should occur at least once every ten years in every major discipline within the system, and more frequently where evidence suggested the existence of serious problems or where changed circumstances had affected the nature of the discipline.

68. The Council should be responsible for the review and approval or disapproval of all new programmes proposed by the province's universities.

69. The Council must have the authority to discontinue funding of programmes that programme review determines are no longer necessary to meet the established goals of the system.

70. It should be recognized that all programmes, whether existing or proposed, in all institutions are not of equal value to the people of Nova Scotia, nor are all undergraduate programmes, existing or proposed, essential for a sound grasp of the relevant discipline at the undergraduate level.

71. The Council should annually determine the allocations among the institutions of the operating and capital assistance provided by the province.

The Council should be the administrative agency in charge of distributing the funds provided for operational expenditures.

72. A portion of the operational funding annually supplied to the system should be spent at the discretion of the Council to effect beneficial change in the system.

73. The Council should monitor financial management within the system to ensure that a high standard prevails throughout. The Council should promote regular assessments of costs including details by institution, by department, by programme and by course.

74. The Council should study the specific needs of disabled students with a view to providing financial incentives and support for programmes to improve access to university for these students.

75. Should the Council on Higher Education prove inadequate to coordinate the academic programmes and expenditures of the universities, the provincial government should consider the consolidation of the separate institutions in a University of Nova Scotia.

Chapter 5

76. Greater efforts must be made to enhance public perception and comprehension of the nature of occupational education and of the function of the various institutions within the occupational education system. The types and levels of occupational education should be given greater publicity.

77. A firm-by-firm, sector-by-sector survey of the industries in the province should be undertaken to determine what skills are required by each firm and each sector.

78. The development commissions, or other suitable agencies, should be encouraged to undertake skills inventories for their development areas.

79. Studies should be undertaken to determine whether equipment used in occupational training courses is similar to equipment most commonly used on the job.

80. Arrangements should be made to enable occupational instructors to attend formal upgrading courses and to spend regular periods on the job becoming acquainted with new techniques.

81. Arrangements should be made to permit practising tradespeople to teach their skills to students and instructors in the vocational schools and other institutions of occupational education.

82. Efforts should be made to extend cooperative education, though there should be a realistic assessment of the opportunities available for this form of work-study programme.

83. A study should be undertaken of the present functioning, and options for the future development, of the apprenticeship system in Nova Scotia.

84. The role and functions of the Trades Advisory Committees in the vocational schools should be clearly defined and steps should be taken to ensure that they fulfil the advisory role assigned to them.

85. Continuous operation of the vocational schools should be introduced only following a thorough study of the expenses involved and in response to a provincial manpower plan that identifies probable directions of labour market demand and the best educational means to meet them.

86. A yearly survey of occupational education graduates' success in finding employment should be undertaken, and the results should be printed and distributed to career guidance counsellors.

87. Career guidance counsellors should be encouraged to give more thought to directing suitable candidates toward the occupational education system, rather than toward the universities.

88. Guidance counsellors should encourage suitably qualified women to study non-traditional subjects offered in the occupational education system.

89. An effort should be made to increase the number of qualified women instructors on the occupational teaching staffs or on the Trades Advisory Committees.

90. A thorough study should be made of the occupational education programmes and funding arrangements at the Atlantic Technical Vocational Centre, Amherst, with a view to ensuring that training is responsive to deaf students' needs.

91. A core curriculum should be introduced in the secondary schools to ensure that students obtain the general educational background necessary to encourage them to seek a wide range of job skills. Mathematics should be compulsory in junior high school to Grade IX level, and senior high school students should experience a core curriculum including mathematics, English, a science, a social science and a language, all taught to a rigorous standard. They should also receive liberal exposure to the arts.

92. Occupational education institutions should give consideration to introducing training modules that provide a core of skills which can be transferred to a variety of different occupations.

93. Systematic response to short-term fluctuations in demand in the job market is best assured by concentrating the delivery of occupational education in the vocational schools and technological institutes, rather than in the universities.

94. If demographic changes lead to excess capacity in the vocational schools, the policy of restricting vocational school courses to students under the age of 21 should be reviewed with a view to opening these courses to adults as well. Alternatively more courses for adults only could be taught using the school facilities.

95. The subdepartment of Manpower, currently in the Department of Labour and Manpower, and the subdepartment of Vocational and Technical Training, currently in the Department of Education, should be removed from their present departments and amalgamated in a new Department of Manpower and Occupational Education.

96. The Employment Opportunities Branch, currently in the Department of Development, should be transferred to the proposed Department of Manpower and Occupational Education as a division directly responsible to the Deputy Minister.

97. The subdepartment of Vocational and Technical Training should ensure coordination of institutional occupational education throughout the system, in high schools, regional vocational schools, district vocational schools, technological institutes and, so far as is possible, the universities.

98. District vocational schools should submit course outlines, proposals for new courses, proposed course enrolments and proposed employment of new instructors to the Programme Support division of Vocational and Technical Training for approval.

99. The Vocational and Technical Training subdepartment should ensure that course rationalization and standardization occurs within the system of vocational schools and technological institutes.

100. The Vocational and Technical Training subdepartment should exercise a watching brief over the industrial arts and business education programmes in the high schools. The Programme Support division of Vocational and Technical Training should give ultimate approval to course outlines, proposals for new courses, proposed course enrolments and staff development in these two high school programmes.

101. Vocational and Technical Training should make a special effort in the high schools to publicize the entrance requirements of vocational schools and technological institutes.

102. The Deputy Minister of the proposed Department of Manpower and Occupational Education should be a non-voting member of the Council on Higher Education.

Chapter 6

103. In suitable localities, resource centres for information about continuing education should be identified and well publicized.

104. Universities should consider the introduction of three- to five-year study schedules for part-time students.

105. Consideration should be given to providing loans with the same repayment terms as full-time student loans to part-time students registered in a three- to five-year study schedule.

106. Universities should consider longer terms for credit courses offered in the evenings, thus ending their timetable's strict adherence to the academic year.

107. The universities and the subdepartment of Vocational and Technical Training should study methods of distance education that would improve access to education without significantly adding to the cost (e.g., video-cassettes, centralization of distance education).

108. Facilities should be provided to permit disabled people to have better access to continuing education.

109. Universities should recognize that the provision of continuing education courses (at university standard in terms of content and difficulty) is an integral part of their mandate.

110. A Provincial Council on Continuing Education, similar in organization to Voluntary Planning, should be established to coordinate continuing education in Nova Scotia. It should be associated with the Department of Education.

111. The Council should consist of eight to ten members and a chair appointed for staggered terms by order-in-council.

112. The Council should be provided with a small secretariat, composed of a Secretary to the Council, two research officers and a secretary/stenographer.

113. The chief responsibilities of the Council of Continuing Education should be the following:

> **(i) coordination of continuing education courses offered institutionally by universities, the occupational system and the school boards and by private organizations who wish to form part of the continuing education system;**
>
> **(ii) ensuring that courses described as continuing education are offered in a way appropriate to adult students;**

(iii) maintenance of educational standards appropriate to the institution or organization offering the course;

(iv) discouragement of unnecessary duplication of courses within a geographical region;

(v) administration and updating of a central computer file on continuing education programmes and activities;

(vi) improvement of access to continuing education for the disabled and persons in rural areas;

(vii) ensuring that the public is adequately informed concerning the delivery and subject matter of continuing education courses in the various regions;

(viii) liaison with associations and groups concerned with continuing education; and

(ix) close and continuing liaison with the Council on Higher Education and the subdepartment of Vocational and Technical Training to bring continuing education matters to their attention.

114. The Council should establish committees drawing their memberships from persons qualified in continuing education to consider regional matters and specific subjects of interest.

115. The Council should hold regular meetings at different locations in the province to enable local continuing education groups, associations and representatives to voice their concerns about the state of continuing education in their areas.

Appendices

Appendix A

Guide for the Submission of Briefs to the Royal Commission on Post-Secondary Education by Individuals, Organizations, and Institutions

In the four months since the Royal Commission on Post-Secondary Education was established, Commissioners have been seeking to identify the principal problems and issues related to their mandate. The Commission has now identified a number of problems as being obvious subjects of inquiry and comment. The purpose of this document is to bring to the attention of those interested in presenting briefs the areas and topics which the Commission feels to be of significance. The list is neither comprehensive nor exclusive. It is merely a preliminary listing of items which at this time appear to the Commission to deserve examination. Individuals, societies, and institutions will recognize subject areas not included in this list. It is the hope of the Royal Commission that the list will be broadened by participants in the debate so that discussion and inquiry into all relevant areas of post-secondary education will be encouraged and undertaken.

In general, the Commission sees the problems of post-secondary education as identifiable under five main headings:

1. The needs, hopes, and objectives of post-secondary education in general and in Nova Scotia in particular. In examining this category the Commission feels that consideration should be given to the following issues:

   (a) The needs and objectives of post-secondary education until the year 2000;

   (b) The establishment of priorities within the total post-secondary programme;

   (c) The definition of the needs of all age groups and the identification of the role of re-educational facilities and continuing education;

   (d) The extent to which the defined objectives of post-secondary education in Nova Scotia are presently being achieved, and the

extent to which efficiencies and shortcomings are present in existing Nova Scotian post-secondary education programmes; and,

(e) The place of pure and applied research; research as a teaching tool and the connection of research with teaching programmes and economic development; the integration of research activity and research institutions so as to encourage maximum use of research potentials.

2. The structures of post-secondary education in Nova Scotia including administrative and institutional government structures, programmes, and methods of achieving the established aims of post-secondary education in Nova Scotia.

It is suggested that the relations of institutions to government authorities and the questions of institutional autonomy and academic freedom within the institutions and inter-institutional cooperation be examined.

In considering matters under this category, the Commission suggests that briefs contain an examination of:

(a) The alternative institutional means of providing existing and future programmes most effectively: i.e. university (undergraduate and graduate), vocational training centres, technical institutions, polytechnics, community colleges, etc;

(b) The location and number of post-secondary education facilities; the level of duplication of programmes; existing and future possible methods of institutional cooperation both of an administrative and academic nature, and the possibility and potential of extended academic and instructional years;

(c) The matter of institutional government and management and the relation of institutions to the statutory authority of the Government of Nova Scotia. Recommendations should be forthcoming to identify means of management and authority that will define, establish and maintain the conditions of academic and intellectual freedom and autonomy and their concomitant responsiblities and obligations; and,

(d) Systems that will promote the effective use of the resources appropriate to post-secondary education programmes including inter-institutional cooperation and the rationalization or reduction of programme duplication, and the place of research and special purpose institutes.

3. The problem of finance of post-secondary education will certainly be recognized as being of central importance to the work of the Royal

Commission on Post-Secondary Education. This broad question is perhaps the most tasking of the questions facing the Commission and is one that requires a wide-ranging inquiry.

In considering this aspect of post-secondary education:

(a) Consideration should be given to the extent to which public revenues should be used to support post-secondary education programmes; what proportion of costs should be borne by students; the extent to which tuition fees should be monitored or controlled by the government; the proportion of federal finance that is appropriate to the support of post-secondary education in Nova Scotia; the extent to which dependence upon government finance affects institutional claims to autonomy; and,

(b) Consideration should be afforded methods of financial control in post-secondary education including government management agencies of provincial or regional type, including the directing role of such agencies in long-term institutional planning and development.

4. The question of availability of post-secondary education and admission thereto. This is colloquially termed 'accessibility'.

This question encompasses the possibility of students entering post-secondary education programmes and involves the broad question of qualification for admission to such programmes, provision of facilities and places, and the finance of post-secondary education programmes.

In considering the broad issue of 'accessibility':

(a) Consideration should be given to demographic projections and enrolment forecasts for all post-secondary education programmes;

(b) Consideration should be afforded the general subject of the suitability of candidates for admission to post-secondary education programmes; present and future admission standards; and the process of evaluation for admission. It may be thought useful by those preparing briefs to make suggestions and representations concerning common university admission standards and consolidated scholarship examinations for Nova Scotian universities; and,

(c) Consideration of the issue of student aid should involve the nature and extent of public support of post-secondary education students; the level of tuition charges; provincial bursaries and student loans under the Canada Student Loans Act; cost to students in retraining or reeducation programmes; fee differential for foreign students; and academic qualifications for student aid.

5. In a province such as Nova Scotia it is seen necessary to ensure that all post-secondary education resources are used to maximum effect. This

suggests the necessity of coordination of post-secondary educational programmes. This may involve an expanded planning and development programme integrated and directed by some form of centralized agency involving technical, vocational, community college, professional school, and university programmes.

In this category topics for examination will include:

(a) Duplication of existing programmes; consequences of academic competition; advantages of institutional cooperation in academic and management areas; reorganization of the existing system to provide more effective delivery of academic, professional, technical, occupational, and vocational education; the place of cooperation and coordination of extension and continuing education; the role of the community college in post-secondary education and in 'distance education'; and,

(b) Consideration should be given to methods of policy development indicating the type of structures appropriate for the most effective development of post-secondary education in Nova Scotia. Such consideration should consider the relationship of post-secondary education in Nova Scotia with the Maritime Provinces Higher Education Commission or other similar agencies, the Nova Scotia Department of Education, and such other provincial government agencies (e.g., Department of Labour) that are concerned with the development of manpower training needs.

D. G. L. Fraser
Secretary
Royal Commission on
Post-Secondary Education

June 29, 1983

Appendix B

List of Individuals, Organizations and Institutions Submitting Briefs to the Royal Commission on Post-Secondary Education

Acadia University
Acadia University Institute
Prof. Agar Adamson
Advisory Council on the Status of Women
Dr. John Aldrich
Alumni Association of the Nova Scotia Teachers College
Mr. Arthur Andrew
Association of Nova Scotia Land Surveyors
Association of Psychologists of Nova Scotia
Atlantic Conference on Learning Disabilities
Atlantic Provinces Council on the Sciences
Atlantic Provinces Council on the Sciences, Mathematics, Science and Engineering Education Committee
Atlantic Provinces Library Association
Atlantic School of Theology
Atlantic School of Theology Alumni Association
Mr. F. W. Buckley
Mr. Donald A. Cameron
Canadian Association of University Teachers
Canadian Congress for Learning Opportunities for Women
Canadian Institute of Management
Canadian Institute of Marine Engineers, Atlantic Branch
Canadian Medical Association Conjoint Accreditation Service *and* Medical Society of Nova Scotia
Canadian National Institute for the Blind
Canadian Organization of Part-Time University Students
Canadian Pensioners Concerned Incorporated
Committee for Continuing Teacher Education
Company of Master Mariners of Canada
Mr. Alan K. Connors
Continuous Learning Association of Nova Scotia
Prof. W. B. Cunningham
Dalhousie Alumni Association
Dalhousie Faculty Association
Dalhousie Staff Association
Dalhousie University
Dalhousie University, Faculty of Administrative Studies
Dalhousie University, Faculty of Arts and Science
Dalhousie University, Faculty of Dentistry
Dalhousie University, Faculty of Health Professions

Dalhousie University, Faculty of Law
Dalhousie University, Faculty of Medicine
Dalhousie University, Part-Time Studies and Extension
Dalhousie University, University Library
Dartmouth Association for Learning Disabilities
Dartmouth Chamber of Commerce
Dartmouth District School Board
Disabled Individuals' Alliance
Fédération Acadienne de la Nouvelle-Ecosse
Dr. Wayne Grennan
Mr. George MacD. Haliburton, P. Eng.
Halifax Board of Trade
Halifax Business Academy Limited
Halifax District School Board
Mr. Reg A. Harlow
Mr. Kenneth D. Hunt
Institute of Chartered Accountants
Institute of Management Consultants of Canada
Institute of Public Affairs
Dr. H. W. Jones, Department of Engineering Physics, Technical University of Nova Scotia
Mainland Nova Scotia Building and Construction Trades Council
Maritime Language Services
Maritime Secretarial Academy
Mr. Mike Marshall
Dr. Ora R. McManus
Metro Council on Continuing Education
Metro Service for the Deaf
Ms. M. Bernice Moreau and Ms. Ruth M. Fraser
Mr. John Morris and Mr. James Isaac
Mount Saint Vincent University
Multicultural Association of Nova Scotia
Nova Scotia Agricultural College
Nova Scotia Association of Architects
Nova Scotia Association of Optometrists
Nova Scotia Barristers Society
Nova Scotia College of Art and Design
Nova Scotia Confederation of University Faculty Associations
Nova Scotia Dental Association
Nova Scotia Federation of Labour, C.L.C.
Nova Scotia Government Libraries Council
Nova Scotia Land Survey Institute
Nova Scotia School Boards Association
Nova Scotia Society of Occupational Therapists
Nova Scotia Teachers College
Nova Scotia Teachers Union

Post Secondary Education Association for the Deaf
Provincial Dental Board of Nova Scotia
Public Archives of Nova Scotia
Registered Nurses Association of Nova Scotia
Respiratory Technology Society of Nova Scotia
Saint Francis Xavier University
Saint Mary's University
Saint Mary's University Alumni Association
Scientific Advisory Board *and* Combined Faculty Committee for Medical Laboratory Training in Nova Scotia
ServiceMaster Contract Services (Atlantic)
Dr. C. Morton Shipley
South Shore Education and Research Associates
Students' Union of Nova Scotia
Technical University of Nova Scotia
Prof. J. G. Tillotson
Tourism Industry Association of Nova Scotia
Truro and District Chamber of Commerce
Université Sainte-Anne
University College of Cape Breton
University College of Cape Breton, Bras d'Or Institute
University of King's College
Dr. C. E. van Rooyen
Voluntary Planning
Wolfville, Town of

Appendix C

Schedule of Public Hearings of the Royal Commission on Post-Secondary Education

December 2, 1983, Sydney
December 8, 1983, Antigonish
December 9, 1983, Truro
December 16, 1983, Meteghan
December 17, 1983, Wolfville
January 4, 1984, Halifax
January 5, 1984, Halifax
January 6, 1984, Halifax
January 20, 1984, Halifax
January 21, 1984, Halifax
February 3, 1984, Halifax
February 4, 1984, Halifax
February 10, 1984, Halifax
February 11, 1984, Halifax
February 17, 1984, Halifax
February 18, 1984, Halifax
February 24, 1984, Halifax
March 9, 1984, Halifax
March 10, 1984, Halifax
March 30, 1984, Halifax
March 31, 1984, Halifax
April 7, 1984, Halifax
April 12, 1984, Halifax
April 13, 1984, Halifax